The Open Court

A MONTHLY MAGAZINE

Devoted to the Science of Religion, the Religion of Science, and the Extension of the Religious Parliament Idea

Founded by Edward C. Hegeler

VOL. XXXVII (No. 1) JANUARY, 1923 No. 800

CONTENTS:

Frontispiece. Descartes.

The Secret of Life. Albert Gehring..... 1

Lucretius on Death. T. V. Smith..... 10

Civilization, Science and Inspiring Ideals. Victor S. Yarros..... 15

This Way Lies Happiness. Annie Marion MacLean..... 24

The Religion of a Naturalist. William E. Ritter..... 30

An Interview with the Late Dr. George Burman Foster. J. V. Nash..... 37

On the Strength and Weakness of Descartes' "Method." Ernest A. Norris.. 40

Philosophy and the Universe. Hardin T. McClelland..... 46

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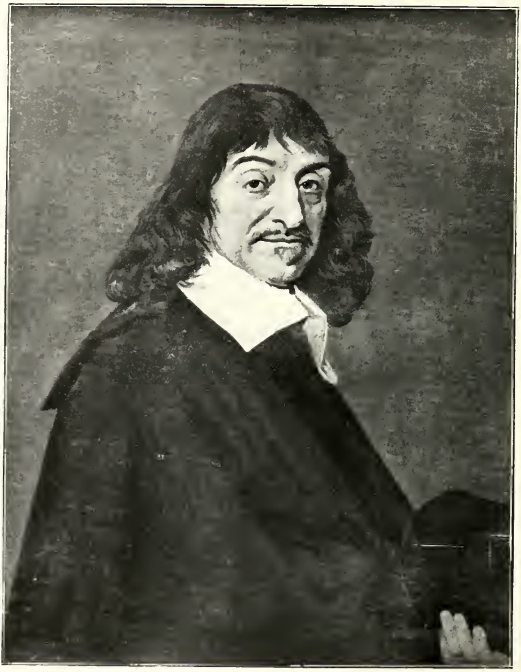

DESCARTES

Frontispiece to The Open Court.

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THE SECRET OF LIFE.

BY ALBERT GEHRING

THE question concerning the nature of life is a simple, mechanical one. The real difficulty arises when we consider the difference between conscious and unconscious life. What is it that endows the protoplasm, at a certain point, with the faculty of feeling,—that, indeed, is a question which is baffling in its elusiveness.

But life as such, as it is shared by plants as well as animals, and lies outside the realm of consciousness, is a comparatively simple affair. The question here becomes: what is it that underlies the chemical and physical differences, not so formidable as to defy analysis, that separates the organic from the inorganic realm?

Before we attack this question, we must of course determine what the chemical and physical differences under consideration really are. Verworn has gone into this matter in some detail.[1] He subjects to criticism fourteen supposed criteria of life, with the result that all, barring a single exception, are found inadequate. The only thoroughgoing and unfailing distinction which this author recognizes between living and dead matter is found in the fact that the former contains albuminous substances, with their highly complicated chemical formulae, while the latter does not. He rejects metabolism as a distinction, because he maintains that this process can also be duplicated in the inorganic realm, and he cites the method by which nitric acid when brought into contact with sulphur dioxide, is transformed into sulphuric acid and nitrogen dioxide. If water and air are constantly added, he says, the nitrogen dioxide will ever again pass into nitric acid, which once more gives

[1] *Allgemeine Physiologie*, Jena, 1897, p. 121 *et seq.*

up a part of its oxygen to new quantities of sulphuric acid, "so that the molecule of nitric acid is constantly broken down through a loss of oxygen, and renews itself again through a taking-up of oxygen." However, it is admitted by our author that such cases are rare, and hardly occur in nature, where the conditions are not artificially produced by man. But in making this admission, he really destroys his objections to metabolism as a criterion. For we are dealing, in the case of living matter, with organisms, which are capable of existing and sustaining their peculiar vital processes —whatever these may be—by themselves. The fact that metabolism can be duplicated artificially by man, is no argument against the distinction in question, for the mechanisms through which this end is attained are fashioned and regulated from without, and the process would immediately collapse if it were not kept going by human help. If we wish, we may substitute the term "spontaneous metabolism" for the other, and we shall then have a distinction which is unmistakably characteristic of life. These two distinctions,— spontaneous metabolism and the presence of albuminous matter,— are those which can safely be drawn from the reasonings of Verworn.

According to Ostwald, there are three distinguishing marks of living organisms: they are *stationary* in form, not *stable;* they have the capacity for *selfacquisition of nutrition;* and the capacity for *reproduction*.[2] By a stationary body Ostwald means one which is not,—like a stable one,—"at rest or unchangeable in all its parts." but which, "though it seems unchangeable in its form, internally undergoes a constant change of its parts." A brass faucet is a stable body, the stream of water issuing from it is stationary. But as our author makes the further statement that "*change of substance, metabolism,* appears as a necessary property of the stationary body," we may substitute this term for the other. It is more specific.

According to Calkins, there are five marks which "distinguish living from all other kinds of matter." They are: chemical composition, power of waste and repair, growth by intussusception, power of reproduction, and adaptability.[3] As with Verworn, albuminous compounds are specified as the peculiar characteristic of living matter. The power of waste and repair is merely another

[2] *Natural Philosophy,* N. Y., 1910, p. 163 *et seq.*

[3] *Biology,* N. Y., p. 6 *et seq.*

name for metabolism. Growth by intussusception is a new quality, not mentioned by the other writers, but as metabolism involves intussusception, only the feature of growth is really new. Adaptability is described as the "capacity to vary under changed conditions of the environment."

So we have ten criteria, disposed as follows:

Verworn	Chemical Composition
	Metabolism
Ostwald	Metabolism
	Reproduction
	Self Acquisition of Nutrition
Calkins	Chemical Composition
	Metabolism
	Growth
	Reproduction
	Adaptability

Metabolism is mentioned three times, chemical composition and reproduction appear twice each, and the other three distinctions once. By combining the three sets of criteria and cancelling the duplications, we obtain the following list:

Metabolism
Chemical Composition
Reproduction
Self Acquisition of Nutrition
Growth
Adaptability

The question now arises: how can we explain these features, what is the underlying cause and basis of these peculiar manifestations which we call vital?

In an enquiry like this, it is desirable to descend to elementals, dealing with the simplest appearances of the things under discussion. So that, having determined what the appearances of life really are, in their ultimate analysis, it behooves us next to ask, what is the smallest particle of matter in which these appearances may be found?

Generally the cell has been regarded as the unit of life. But in the case of inorganic bodies, we find that it is the molecule or atom to which the substances are reducible, and so the question naturally arises: is life not similarly existent already in units that

are smaller than the cell,—is there not a molecule of living matter, just as there is a molecule of salt or water? General considerations would urge toward the adoption of this conclusion. At least, analogy would forbid us to conclude otherwise until we are confronted with reasons that compel us to do so. Now, protoplasm has been analyzed chemically, and the elements which enter into its composition have roughly been determined. But when so determined, they no longer belong to a living, but rather a dead body, with no possibility of resuscitation. The analysis which seeks to wring its secret from nature, destroys the very phenomenon which it endeavors to explain. Inorganic bodies are not similarly recalcitrant. They do not defy inspection. We can analyze them into their molecular components without destroying their identity, or at least the possibility of reconstruction. But try to determine the composition of life, and you have something that is life no more. So it would appear as if there might indeed be a difference in this respect between living and lifeless matter. And this impression is strengthened by a review of the features characteristic of vitality. Metabolism, reproduction, self acquisition of nutrition, growth, and adaptability,—all are dynamic, not static, in nature. So that we are tempted to conclude that there must be something dynamic, likewise, about the remaining feature—chemical composition—and that the static molecule, as we know it, cannot be the elemental particle of vitality that we are after.

Observation cannot help us here, for we have no microscopes fine enough to register the activities of the atoms which constitute the "molecule" of life. We are thus reduced to supposition. And of this let us now avail ourselves.

Let us imagine a molecule which is not fixed and stable, but undergoes a series of internal changes,—one state ever leading to another, but the whole retaining its general appearance of constancy. To symbolize this, let us imagine two elements—X and Y —which are capable of entering into union with each other in the proportions of 2:1, 3:1, and 3:2. At first we have X_2Y. An atom of X is now added and the molecule becomes X_3Y. The addition of an atom of Y yields the form X_3Y_2. And another atom of X leads to X_4Y_2, which splits into two of the original molecules. Thus we have gone through a little cycle of changes, which has brought us back to the point of departure.

It is not to be supposed, of course, that anything just like this

actually takes place in nature. The example was merely given to symbolize, however crudely and faultily, a procedure which would answer our purpose. What we wish to bring home is the idea of a molecule which is not static, but passes through an internal cycle of changes which, as we shall later see, will explain the phenomena of life. Very likely the "molecule" would be tremendously complicated. It might consist of various submolecules. Let us, by way of hypothesis again, start with the supposition that there are three of these,—*a, b,* and *c*. Certain changes might now be supposed to take place in *a*. Some atoms are added, which leads to the expulsion of others. These are taken up by *b,* which likewise expels some of its members and hands them over to *c*. *C* takes up these in turn, and similarly casts off a few superfluous members. The process is like that in card games, where each player receives certain cards from his neighbor on the left, and in turn passes on a similar number to the neighbor on the right And if we might now suppose this process to be continued in supplementary order, every submolecule taking up what it formerly expelled and expelling what it formerly took up, we should arrive at the starting point again, and should have the material of an endless series of inner changes, closely resembling the metabolistic changes of life.

This idea, too, is purely fanciful. It is not to be supposed that anything just like this, either, takes place in the vital molecules. But once more, our purpose is only to bring home the conception of a molecule with "inner circulation" of elements, however artificially and mechanically we may do this. Many modifications of the process would be conceivable. Thus, instead of adhering to the same number of submolecules, as in the previous example, we might imagine a variation in their number. Some of the submolecules, for example, might, through the constant addition of atoms, fall apart into smaller unities. These, too, would grow in size, until finally they melted together again into the original number, but with an increase in size. Thus, we might have three submolecules to begin with,—*a, b,* and *c*. These split into four, five, or even more,—of smaller volume and different composition. But with the increase in atoms they fall back once more into the original submolecules,—but now we have *2a, 2b,* and *2c*. That is, the molecule has grown to twice its original size.

In some such ways me might typify the inner changes in our albuminous "molecules." What the exact nature of these changes is, we do not know. But that there are cyclical changes of some

sort, and that this is the distinguishing feature of life, is the proposition which we would seriously defend.

It is the wonderful "elasticity" and combining power of carbon, —that peculiar element of life,—on which all this may be supposed to rest. The compounds of carbon are said to outnumber by far those of all the other elements put together. Moreover, there is a complexity to some of these compounds, notably the organic ones, which is to be found nowhere else. And many of the compounds stand in definite relations to one another and can be arranged in series, as is shown in the following typical reproduction of symbols:—

$$CH_4$$
$$C_2H_6$$
$$C_3H_8$$
$$C_4H_{10}$$
$$C_5H_{12}$$
$$C_6H_{14}$$
$$C_7H_{16}$$
$$C_8H_{18}$$
$$C_9H_{20}$$

It is known that the number of atoms in the substances which peculiarly constitute life reach into the hundreds. Is it not conceivable, then, considering the "slippery," protean nature of carbon, for certain changes to take place within the vital "molecule" itself, and certain combinations to pass into others, somewhat upon the analogy of the series above, where the mere addition of a constant number of atoms produces one substance after another? May there not be a definite succession of forms, similar to the side-by-side arrangements of homologous members; and may not this succession itself, the process, be the basis of the metabolism which constitutes life? According to this conception, there would be no single, definite molecule of living matter, expressible in number and grouping of atoms, but only a successive series of groupings, which would represent the life-process in their totality.

The hypothesis which we have thus developed would serve as an explanation of all those properties of life which have been posited by our three authorities. To begin with, albuminous compounds, furnishing as they do the greatest number and complication of atoms, would be the playground of this scene of ferment. Most other compounds are too simple and stable for this purpose. Albuminous matter alone seems to be composed of the requisite

number and kind of atoms. Secondly, the process of inner change which we have sketched is the basis, as just said, for the metabolism which is the most prominent feature of life. In fact, it *is* a metabolism in miniature. The power of self acquisition of nutrition is also involved in the process as described. And growth is a natural, almost inevitable accompaniment of the same. We have merely to imagine that there are more atoms taken up into the process than are eliminated, and we shall have growth. Reproduction, to continue, is but little more than growth, in its simplest embodiments. The organism merely keeps on increasing in size, until at last it splits into two separate organisms. As for the remaining characteristic of life, adaptability, that too is in harmony with the process. It is easier to conceive of adaptation in the case of a changing body than in the case of a fixed and stable piece of matter. The many-sidedness of carbon, especially, and its capacity for endless combination, seem to be the very requisite for adaptability.

So then our hypothesis accounts for every feature of life as posited by Verworn, Ostwald, and Calkins. Indeed, if true, it would be the veritable explanation of life, in its material aspects. And it would likewise throw light on numerous related phenomena. It would show us, for example, why it is impossible to obtain the exact chemical formulae of living substances. Subject these substances to analysis and you stop the circulation which is the very essence of their being. Instead of a living picture of activity, you merely obtain a dead precipitate. And this stoppage of the process corresponds to,—in fact is the phenomenon of death. It would also show us why certain of the lower organisms are destroyed by heat, but not by cold. Cold, we may suppose, temporarily arrests the vital process, but does not destroy it. The position of the atoms relative to each other is not changed. The atoms are merely drawn together; they "hibernate" for the time being, but with the renewed advent of heat resume their circulation, and life appears once more. Intense heat, however, would drive apart and disarrange the atoms completely. Their peculiar vital "setting" being lost, they would relapse, upon cooling, into passive, lifeless particles, similar to any bit of inorganic matter.

Indeed, our hypothesis might even throw light on the different lines of development which living germs may follow, and thus on the phenomena of heredity. The peculiar complexity of the living molecule, we can imagine, would leave room for various modes of inner circulation. It would be like a checker board, on which com-

binations of great variety would be possible. Now, in some cases one combination would be followed, in some another. But the substances, once having started in particular rhythms, would become "set" in the same, and tend to repeat them ever after. Like pieces of fireworks, they would "go off" in their own particular directions. (A rocket, for example, is set so that it will soar toward the sky, a wheel so that it will circle about its axis,—yet the propelling principle is the same.) So living germs would start off in different directions. But once having started, they might again be "deflected" in particular ways, which would thereupon become habitual, and once more serve as the starting points of later "deflections." Thus, slight differences in the original "settings" might become the basis of many future changes, and would account, in part, for the mysterious phenomena of development and heredity.

The advantage of this method of viewing the situation is, that it introduces the concept of motion. The metabolistic exchange of atoms in the intra-molecular cycle must be viewed as an extremely rapid motion. Now, as long as the seeds and germs which generate living beings are regarded merely as static particles of matter, it seems hopeless to explain the process by which they develop into complex organisms. But view them as settings which, when introduced into the proper environments, will generate their specific motions, and it becomes comprehensible how these motions, ever continuing and gathering new momentum, will indeed develop into something that is unforeseen in the germ or seed. A more unobstructed motion by itself may already yield surprising results, as witness the mass of snow obtained from continuously rolling a snowball over the ground. But further results may ensue when the motion is obstructed or combined with outside influences. Thus two billiard balls rolling over a table, one of which was struck at its top and the other at the bottom, present exactly the same appearance. If both were suddenly to be stopped by the hand or allowed to roll on indefinitely, hardly any difference would appear. But let them come into collision with another ball, and the first will thereupon continue along its original course, while the other will recoil and retrace its path in a backward direction. So, little differences of propulsion in the seed or germ, metaphorically speaking, may lead to different reactions upon contact with the environment, reactions, furthermore, which will be much more varied and complex than those of the billiard balls, in accordance with the greater complexity of the germ and its inner motion.

We see thus how all the important manifestations of life would be explained, or at least have light thrown on them, by our hypothesis. It would remain now for chemical investigation to take up this hypothesis, in case it seemed sufficiently plausible, and show that it actually has basis in fact.

LUCRETIUS ON DEATH.

BY T. V. SMITH.

FOR the modern intellectual any serious preoccupation with death is out of the question. If he takes life seriously, he is too much engrossed in his work to think of death; if he takes life lightly, he cannot give up his play for such sombre reflection.

"My candle burns at both ends
It will not last the night.
But ah my foes, and oh my friends,
It gives a lovely light."

Absorbing interest in the very process of living has thus brought it about, for better or for worse, that the modern sophisticated man lives straight up to the hour as if he meant to go on living forever. Such busy mortals count into their plans only those who arrange for conferences beforehand and then come at the appointed time: death is notoriously irregular about his engagements with men. Come he will, of course, and have his way he must; but for them sufficient unto his coming is the hour thereof.

It must be borne in mind, however, that the majority of men in our day are not sophisticated intellectuals, and have not achieved this fine unconcern regarding death. The fear of death is a very real factor in the lives of multitudes of men and women to-day. No religion has yet succeeded in robbing death of its terrors. The most that any religion has done is to make these terrors less by emphasizing the great compensations that await the faithful after death. But to get the rewards one must remain faithful *unto* death. Even our own religion, as often interpreted, has traditionally left enough doubt regarding one's personal salvation to make death dreadful; for since no sin can enter into heaven and since even the righteous confessedly sin (in thought at least) every day, even the saint, if

he drop off unawares, might wake up in hell because he did not have time to make peace with God over his latest transgression. This logic, strictly true to much Christian thought, has traditionally been so softened by notions of divine goodness as to make the good Christian *fairly* certain of what the "heathen" Socrates felt no doubt at all—"that no harm can come to a good man, living or dead." So long as men seek after an other-wordly salvation, undoubted reassurance can come only through such a belief in the goodness of God as guarantees universal redemption. If one cannot rise to this faith, then must he go on fearing death, or find some other solvent for his fear.

Fifty years before Jesus was born there died a philosophic Roman poet who made available other solvents for this universal fear. His name was Lucretius. He was not a great philosopher, nor even a great poet. But he had keen insight into the hopes and fears of men. Hearing priests of the occult intimidate men, seeing mortals on every hand cringe before the inevitable event, and being himself convinced that it was a great mistake to rob life of what meaning it did have by shrinking from what was thought to come after it,—Lucretius set about to enrich life by robbing death of its terror. Where fears existed, he thought it better to meet them in the open and have it out with them. For those whose faith in future rewards has declined more rapidly than their fear of avenging agencies after death—fear of the gods, strangely enough, often outlives any vital belief in their existence—the quaint but sincere logic of Lucretius will be of interest, even though its universal gospel is one of salvation *in* the grave.

While we are, death is not: when death is, we are not. In this terse dilemma is summed up the rationale of death which brought such comfort to Lucretius, and in which he hoped other men also might find solace. He saw that human life was sometimes unhappy because men lived incessantly under a fear of death. This fear he thought to proceed from the belief that beyond death, the gods waited to punish some men in terrible ways, or, perchance, all men in milder ways. In his philosophic mission, therefore, of making men happy, a very evident duty which devolved upon him was in some way to unshakle men from the bondage of this fear. In addition to universal salvation—a solution which Christianity made possible and toward which it has gravitated—there is, theoretically, more than one other way to envisage death as a happy ending. One may deny the existence of gods; or, admitting their existence, he

may hold that they have no concern with man here or hereafter; or, again, he may deny that the soul persists beyond death either for reward or for punishment.

Lucretius, though seeming to admit the existence of gods—some critics to the contrary however—maintains that they are not at all interested in the conduct or the welfare of men. "For," said he, "the nature of gods must ever in itself of necessity enjoy immortality with supreme repose, far removed and withdrawn from our concerns; since exempt from every pain, exempt from all dangers, strong in its own resources, not wanting aught of us, it is neither gained by favors nor moved by anger." Again he holds that "If you well apprehend and keep in mind these things, nature free at once and rid of her haughty lords is seen to do all things spontaneously without the meddling of the gods."

Attributing, therefore, to nature the ability and the predilection to create us and all things which we know without "the meddling of the gods," Lucretius prepares a strong reinforcement for his doctrine of death by a development of the materialistic dogma that we do not in soul or body persist beyond death. He grounded this contention in the doctrine which Democritus had elaborated, and which his more immediate master, Epicurus, had further affirmed, the doctrine of atoms. The special phase of this doctrine which pertains to another life is that the mind and soul are formed of the same substance which constitutes the body; and that, therefore, they are coeval. He did not, indeed, claim that the substance of the soul is identical with that of the body; but the significant fact of his belief upon this point is that the fabric from which both, as it were, are woven, is matter. The soul is made of much finer and smoother atoms, to be sure, and is, therefore, much quicker in its motions, "as the rapidity of the thinking process demonstrates." Still both body and soul are spontaneous products of nature from matter which differs, not in kind, but only in quality; and the dissolution of the two means the death of the self. In this way, he made it doubly sure that, if the gods were disposed to punish men eternally, which he denied, they would be disappointed by seeing their intended victims vanish as effectually as did the airy witches before the wondering stare of Banquo and Macbeth. With this twofold blow, Lucretius thought to strike down this nightmare of the human imagination; and make it possible for cowering men to rise up and live fearlessly while they did live.

Lucretius did not believe that the constituent matter either of soul or of body is destroyed at death. He regarded death as being only the separation of soul-atoms and body-atoms. But he considered the individual to be neither the soul nor the body, but the resultant of their union. And so he reasoned that, even though "the nature of the mind and the power of the soul do feel, after they have been severed from our body, yet that is nothing to us who by the binding tie of marriage between body and soul are formed each into one single being." He continues further by way of illustrating this thought: "And just as in time gone by we felt no distress, when the Carthaginians came together from all sides to do battle and all things shaken by war's troublous uproar shuddered and quaked beneath high heaven, and mortal men were in doubt which of the two peoples it should be to whose empire all must fall by sea and land alike, thus when we shall be no more, when there shall have been a separation of body and soul, out of both of which we are each formed into a single being, to us, you may be sure, who then shall be no more, nothing whatever can happen to excite sensation, not if earth shall be mingled with sea, and sea with heaven."

But to make assurance doubly sure, he further analyzed the problem, and precluded the only possibility for lingering doubt regarding the state beyond death. By the doctrine of cycles, which was commonly held in his day, especially in Stoic circles, there was a possibility—a certainty as some believed—that, in a future age, the atoms which formed an individual's body would be arranged again to form a human body exactly like the former one; and that even the finer atoms of the soul would be called again to form its soul. In other words, the doctrine taught that an individual, after one complete dissolution, might exist again and again in the eternally recurring cycles of nature. What, then, if the gods should wreak vengeance upon him when he came to be himself a second time?

In considering this possibility, Lucretius assumed that, if man were to exist again in the future, he had already existed in the past. "Can lines finite one way be infinite another?" Continuing upon this hypothesis, he reasoned that, "if time should gather up our matter after our death and put it once more into the position in which it now is, and the light of life be given to us again, this result even would concern us not at all, when the chain of our self-consciousness has once been snapped asunder. So now we give ourselves no

concern about any self which we have been before, nor do we feel any distress on the score of that self. . . . We cannot recovery this in memory: a break in our existence has been interposed, and all the motions have wandered to and fro far astray from the sensations they produced. For he whom evil is to befall, must in his person exist at the very time it comes, if the misery and suffering are haply to have any place at all; but since death precludes this, and forbids him to be, upon whom the ills can be brought, you may be sure we have nothing to fear after death, and that he who exists not, cannot become miserable, and that it matters not a whit whether he has been born into life at any other time, when immortal death has taken away his mortal life."

But it was not from fear of the gods alone that Lucretius meant his philosophy to free men. He sought also, with an almost Buddhistic outlook, to combat a more intimate poison of human happiness. As one of his translators observes, "he argues that seated in man's very self is some source of restlessness, discontent and sorrow, by which life is still vitiated, even though all fear of hell and of the anger of the gods be done away with. Self, he says, is the secret malady of each of us—forever unsatisfied, forever ill at ease; and death alone can free us from this foe that is of our own household."

In a manner somewhat removed from the highways of current thought, Lucretius sought to enrich human life by freeing it from the shackles of tradition. The sincerity of his attempt cannot leave one unmoved, and the simplicity of his solution must challenge a modern reader to better the argument, even as human life has been immeasurably improved since Lucretius. In a fine spirit he hoped at a single blow to lay the two greatest enemies of humankind—fear of the gods and discontent with self. Secure alike from both his inner and his outer foes, man could then, with the gathering shadows, lie down in contentment after banking his fires for the eternal night.

CIVILIZATION, SCIENCE, AND INSPIRING IDEALS.

BY VICTOR S. YARROS.

IN AMERICA, we have been told, civilization is only a name and a hollow pretense. There is no real civilization here, and he or she who misses that intangible commodity and longs for it must shake off the dust of America and seek a cultural and spiritual home in Europe. True, civilization is sick in Europe, but not sick unto death, apparently, according to the youthful iconoclastic critics of America. European civilization is bound to recover and blossom like the proverbial rose once more, and weary, disappointed American talent can still find balm and tonic in Paris, London, Rome, Berlin, Madrid, Munich, Moscow.

Yet there are distinguished and progressive Europeans who despair of Europe, think it is dying of mutual hate, malice and moral bankruptcy, and who look wistfully and hopefully toward North America, or toward half-Asiatic Russia, or toward ancient and mysterious China as possible redeemers and healers of afflicted Humanity.

Now, Russia has been emulating and imitating Western Europe for about three hundred years. It is not likely to relapse into Tartar barbarism. Bolshevism is only destructive Marxian Socialism violently adapted to Russian conditions, and its total failure was a foregone conclusion. Given illiteracy, ignorance, peasant isolation, traditions of autocracy and tyranny, and the whole story of the Bolshevik adventure calls for no elaborate explanation. But even in Russia the forces of sanity, construction, liberalism and democracy are certain to prevail in the end, and the process of westernization must eventually be resumed. Russia has valuable elements to contribute to civilization, but they are not elements that the West cannot assimilate and utilize. America is Europe on the

western hemisphere. American civilization is not and cannot be essentially different from that of Europe. America has no religion, or ethical code, or system of law, or form of social and political organization, or literary and artistic ideals that are radically different from European equivalents of those institutions and possessions. As has so truly been said, *America is to Europe what western America is to eastern.* It means open spaces, opportunity, freshness, boldness, experimentation and courageous adventures. But all these advantages do not affect the quintessence of the civilization, of the social and moral heritage of the human race.

After all, what *is* civilization? It is a term that covers a multitude of ideas concerning law, order, industrial relations, political organization, religious and ethical standards, letters and art, education and recreation. In one country—Russia, for example, or Serbia—only a few are truly civilized; in others, a considerable portion of the population, and in still others half, or even more than half, of the citizenry may be considered as civilized. The greatest and hardest task of civilization is to reach and annex the hosts that still walk in the darkness or live a joyless, sub-human, narrow and trivial life, a life of slavery, drudgery and degradation. Civilization is still aristocratic, and some writers have said that when we talk of France, or Germany, for example, as a progressive, civilized, spiritually gifted nation, we have in mind only a few thousand savants, artists, men of letters, educators and statesmen who think and build and invent and adorn France or Germany. This is true, in a sense; but behind the few thousand men and women of genius, exceptional ability and distinction stand larger numbers who can appreciate the former, aid and encourage them in hundreds of ways and recruit their ranks. And behind these, again, are other thousands who are benefited and elevated by the civilization which creates the atmosphere of the society to which they belong.

The deep discontent in America or Europe with civilization, the gloomy warnings and forebodings indulged in by embattled and pseudo-pessimistic persons, are themselves symptoms of civilization. The ills of civilization are indeed serious, but they are not fatal. Civilization is undergoing a crisis, but it is not the first crisis it has muddled through, nor will it be the last. Civilization is sick, but the doctors unfortunately disagree, as they always have, in their diagnosis of the malady and in their methods of treatment.

What ails world civilization—or, rather, Western civilization?

The true answer is this: It has lost its ideals, inspiration, *raison d'etre*. It has lost faith in itself. Men and women today are as capable of service, of self-sacrifice, of persistent and faithful work as they ever were; but incentives and motives are lacking in many. Pessimism, cynicism, skepticism, "rebellion" have supplanted hope, courage, loyalty and idealism. If humanity—runs the argument—is doomed to extinction; if the little planet that is our habitat must share the fate of the moon, or other dead worlds; if personal immortality, moreover, is an illusion, as science is inclined to hold; if human evolution must reach a limit and stop, and then be followed by retrogression and dissolution under inexorable physical changes—advancing ice and diminishing supplies of food, for example—then why should we concern and trouble ourselves with questions of progress? Why not eat, drink and be merry, since tomorrow the earth and its inhabitants must die?

Now, candidly and sincerely, what answer can we make to this line of argument?

Prof. Ralph Barton Perry, in his work—more critical than constructive—on *Present Philosophical Tendencies* writes:

"To pretend to speak for the universe in terms of the narrow and abstract predictions of astronomy is to betray a bias of mind that is little less provincial and unimaginative than the most naive anthropomorphism. What the residual cosmos which looms beyond the border of knowledge shall in time bring forth, no man that has yet been born can say. That it may overbalance and remake the little world of things known, and falsify every present prophecy, no man can doubt. It is as consistent with religious thought to greet it as a promise of salvation as to dread it as a portent of doom."

To the writer, it must be confessed, this reasoning seems most lame, inadequate and unsatisfactory. It will not impress bewildered men and women, whether young or old, who demand as much science in their religious and ethical faiths as they demand spiritual and inspiring truth from their science. Astronomy may be narrow or thin, as Prof. Perry says it is, but he offers no alternative that is not much, much thinner and more dubious. Moreover, astronomy is not the only science which warns humanity of its doom. What does geology have to say about the past and future of life on this tiny planet, and what inferences can we properly draw from biology, anthropology, geography, history? One cannot build faith on the mere possibility of a message of hope and cheer from "the residual cosmos."

No; Prof. Perry's answer will not do. The true answer is psychological. As a matter of fact, no living person is in the least swayed, affected, influenced by thoughts regarding the remote past or the remote future. The fact that the earth may die a million years hence, or several millions years hence, leaves us absolutely cold and indifferent. No emotional reaction of any sort follows the most categorical affirmation of that proposition. If one is good, the affirmation cannot make him bad; if one is bad, it will not make him good—or worse.

We are so constituted that we must live in the present—for our ideas and sentiments concerning the future *are part of ourselves and of the present.* Our life in the present is not limited—the gods be thanked!—to physical pleasures and pains. We do not live by bread-and-circus alone. We have our appetites, "lower passions"—as we significantly call them—and our petty, if legitimate, interests. But we also have interests, emotions, impulses, longings, passions of a nobler sort. We have general ideas and principles. We have visions and glimpses of beauty and harmony. We have a sense of sin, of unworthiness, of failure that drives us to seek and slowly realize our better selves. Who will assert that the life of the intellect and the finer and purer emotions is not fully as important as, if not more important than, the life of the body, and that even with the average man? So far as the superior elements of humanity are concerned, it is scarcely necessary to point out that they have always unhesitatingly sacrificed material interest and pleasures to the things of the spirit. They have always been willing to give up liberty, ease, reputation and life for the sake of what they believed to be true, beautiful and good. Men and women have died and suffered in prisons, exile, torture because they loved justice, freedom, equality, brotherhood.

What, we may well ask the pessimists and skeptics, is the significance of these facts—facts of which history is full?

To say, as some do, that martyrs and idealists and reformers are victims of delusions, or that their sacrifices have been and are vain and irrational, is not to meet the issue involved. Let us grant the contention for the sake of the argument; what follows? Only, that the martyrs and sufferers make grave mistakes of the mind—of the mind, not of the heart. The quality of the act is not affected. The importance of ideas, of the things of the spirit in a moral and emotional sense, is not disproved. Illusions and dreams for which men and women will suffer and die are certainly abundantly real to them!

But the admission just made provisionally need not be made at all. It is not true that the martyrs and other self-sacrificing innovators are deluded fools, dupes of dogma and superstition. It is not true that suffering, self-denial and sacrifice in behalf of ideals and principles are vain and fruitless.

The blood of the martyrs, it has been said, is the seed of the Church. That is incontestably true. All radical movements and all vital reforms are advanced by the sacrifices of the pioneers and founders. Example has not lost its potency, nor brave, unselfish deed its spell and inspiration. Words are deeds, says the poet, and deeds, we may add, are telling arguments.

We hear much just now about the gross materialism and the anarchical attitude of the young. The more intelligent and educated the young are, we are told, the less respect or patience do they manifest toward social and ethical ideals. Excitement, amusement, fun and success alone have any appeal to the college boys and girls of today, we are assured. Is this true? Not all the college presidents, professors and instructors think so. Here is what Prof. Stuart P. Sherman says on the point in a recent review article:

"The deepest craving of these average [college] young men and women is not to be unbound and released, and to be given a license for a free and spontaneous doing as they pleased in all directions. They recognize that nature and environment and lax educational discipline have made them beings of sufficiently uncoordinated desires and scattering activities. What they deeply crave is a binding generalization of philosophy, or religion, or morals, which will give direction and purpose, which will give channel and speed, to the languid diffusive drift of their lives. The suppressed desire which causes their unhappiness is a suppressed desire for a good life. . . . What human nature craves is something good and great one can do with heart and mind and body."

Similar opinions have been expressed by other noted educators, and the present writer, who has had considerable teaching experience, is able to indorse those hopeful and heartening opinions.

However, the question remains, *What ideals and guiding, inspiring ideas can we sincerely and whole-heartedly commend and offer to the young?* To repeat, what we offer must be scientific, reasonable, philosophical. Pseudo-ideas and empty formulæ will no longer suffice. Talk about the alleged pragmatic "will to believe" sounds more hollow than ever. Save in a few instances, the emotional nature will not find satisfaction and solace in so-called "truths"

which the intellect rejects as wholly arbitrary and baseless. Assertions concerning the unseen and unknown will not be accepted without scientific evidence of the authenticity of any alleged revelation, and this is merely one illustration of many one might give in support of the inescapable necessity of firm, genuinely scientific foundations of any belief whatever that is demanded of us.

It is impossible to agree with Dr. Charles P. Steinmetz, the eminent electrical engineer, who asserts that "there can be no scientific foundation for religion, but belief must always remain the foundation for religion," because "science is logical reasoning from facts, that is, sense perceptions," while religion deals with the infinite, the unknowable, etc., and that, in connection with the old controversy between science and religion all that "we can say is that the two are not necessarily incompatible, but are different and unrelated activities of the human mind." There are several fallacies in this far from novel conclusion, fallacies that die hard.

In the first place, if belief must always be the foundation of religion, the question follows, *belief in what?* If we cannot use science in the search for religious truth, what means have we for distinguishing between fact and fancy, fable or imposture in the religious realm? Must we believe anyone who advances the pretensions of a prophet, a savior, a messenger of God? If not, and if we may and must test religious claims and pretensions, is not the testing *scientific?*

In the second place, assuming that we conclude, in accordance with scientific methods and criteria, that a certain message *is* divine —a revelation to the finite mind as to the infinite and unknowable— there remains the task of interpreting the message and rejecting interpolations, perversions, mistranslations, and the like. How can we accomplish this task without science? And surely the exact meaning of a message can only be determined scientifically!

Finally, if religion is a distinct and non-scientific activity of the mind, how can we follow the operations of the mind in that activity and be certain that they are normal? Science, and science only, enables us to ascertain our own or others' sanity and reject hallucinations and illusions.

No; there is nothing in Dr. Steinmetz's argument. If religion is not and cannot be justified by facts and logical reasoning, it cannot be justified at all, and "religious truth" becomes a meaningless phrase. It is astonishing how many supposedly intelligent and well-read persons use words and propositions that are empty and mean-

ingless! Dr. Steinmetz's alleged vindication of religion, welcomed so warmly by the orthodox, is in reality a rejection of religion.

Applying this qualification to the issue we have been considering,—namely, the kind, character and credentials of the ideals and ideas that will stand the keenest analysis and survive the most merciless skeptical attack,—what can we candidly affirm?

In passing, and before answering, it may be well to animadvert on the extraordinary notion, prevalent among the shallow, half-baked writers, that Psychoanalysis has somehow revealed alarming traits and potentialities in human nature, and thus delivered a deadly blow at the whole conception of human progress. Whatever else Psychoanalysis may have done, or failed to do, it has certainly thrown no new light on normal human nature. History, the actual record of human achievements, human trials and errors, is an infinitely safe and better guide to rational conclusions respecting human nature than the complex of theories, guesses and paradoxes associated with Freud and his school. We know what humanity has done and can do. We know what the course of evolution has been in politics, industry, trade and social relations. Whatever may lurk in the "Unconscious," the family, the Community, the Arts and Sciences, the great ethical and social movements are *facts*. They could not exist if humanity were hopelessly depraved and sinful, if virtue and wholesome self-restraint and character were sheer fictions. Our hopes and expectations of future progress are based on the facts and net results recorded in institutions, standards, accepted principles and observed human behavior. The psychoanalyst, in his clinic, may explain individual aberrations; he cannot, and is not called upon, to explain average conscience and intelligence in action.

We can confidently and scientifically affirm several propositions. —namely:

That no happiness, contentment or serenity can possibly be found by normal persons in a narrow, selfish, crudely and grossly materialistic existence;

That man does not live by "wine, woman and song" alone, and that his intellect and emotional nature make demands upon him which can be satisfied only by devotion to truth, beauty, nobility and righteousness;

That Altruism is just as "natural," primordial and essential to human life as enlightened Egoism; and, finally,

That, in the words of that acute thinker, observer and creative artist, Joseph Conrad, it is not necessary to believe that the world is good and harmonious, but only that it can be made so by human effort.

Compared with certain theological and metaphysical creeds, the foregoing brief and simple set of propositions may seem meager, prosaic and disappointing. But scientific and philosophical thought cannot, at present, offer richer and more abundant material for a new heaven and a new earth. However, what is given *is enough for the needs and purposes of the most advanced among us.* On the foregoing propositions a new and worthy way of Life can be founded. Justice, equal opportunity, liberty, co-operation and human brotherhood, national and international, cultivation of science, philosophy and beauty—these values can all be derived and their validity and reality deduced from those few and simple propositions.

If the world is full of strife, wrong, injustice, malice and cruelty, the explanation of the deplorable fact is to be found not in lack of intelligence or good will in humanity, but in the comparative immaturity of man and the vicissitudes he has encountered in his upward march since the dawn of civilization. Man has had to adapt himself to a changing environment. He has had to fight and conquer "nature." He has had to learn the advantages of work and co-operation. He has had to explore the earth and learn to know its inhabitants. He has had to overcome the antipathies and prejudices generated by ignorance, fear and distrust.

At last, though by no means fully emancipated, man is ready, or making ready, to face the problems of social and economic organization, to ponder the question whether the world can really be made safe for free, rational, civilized human beings. Can war be abolished? Can poverty be eliminated? Can the great mass of humanity be lifted to a rational, dignified, human plane of existence? Can vulgarity, vice, ignorance and coarseness be successfully combated, and good taste, clean living, culture and love of beauty widely diffused? These are the questions that interest and challenge the thoughtful and earnest men and women of today, and, if each of them can be answered honestly in the affirmative, then we *have* ideals that are scientific, philosophical and worth living, working and striving for.

We certainly have every right to answer those questions in the affirmative. We have the assets of intellect and good will wherewith

we can, if we choose, conquer evil and replace it with good. We can assure the young that there is joy and inspiration in working and living for the ideal sketched above. We can assure them that the problems posited by the ideal are solvable, and that each of us can contribute something to the right solution. History supports such assurances, and individual and social psychology alike confirm them.

Whatever one's theological, religious, metaphysical views may be; whatever one's conceptions regarding personal immortality, for example, or the relation of the individual to the whole cosmos, the ideal just sketched cannot fail to appeal to him as being calculated to give meaning, worth and nobility to human life. Christians, Buddhists, Confucians, Agnostics, Mohammedans, Atheists, Monotheists, Pantheists—all men and women, in short, who have emerged from brutish forms of barbarism and stopped to reflect on life, duty, contentment, inward peace can find in the modest service we have been considering inspiration, stimulation, refreshment and satisfaction of the insistent demand of their own natures for expression and fulfilment. What more is there to ask or expect of this life?

THIS WAY LIES HAPPINESS.

BY ANNIE MARION MACLEAN.

PHILOSOPHERS and fools alike have ever been on a quest for happiness; some have found it for themselves; others are groping along the way. Life must yield contentment or it has been lived in vain. And contentment is happiness.

This is not a digest of philosophical theories on the subject of how to attain happiness; it is a simple story of how one person found the road thereto when the gates seemed closed.

A few years ago all the seemingly desirable things in the world were wrested from me by disease. After the paroxysms of the first months had passed, and the hope of restoration vanished, I saw myself a derelict by the roadside. The present was a time of horror; the future black despair. Death was not to solve the problem; my sentence was life servitude in suffering. Wild tumults raged within; my universe was chaos. The cherished activities of preceding years were to be mine no more; there was only a dreary waste of drab existence ahead. With the realization of the full import of this situation, there finally came to me a practical knowledge of the power of the human will to control one's outlook on life. When once I faced the facts, I set about gradually reconstructing my view-point. Since life for me henceforth must be confined within infinitesimal physical limits, I sought re-adjustment. I who had gone through the world with winged feet must henceforth be only an onlooker with a narrow field of vision. But I vaguely realized that while life remained, interest in things without should not be relinquished. A new outlook tower must therefore be erected. To rear a new edifice one needs something on which to build. I had memories of dear dead days and friendships and intellectual interests. This way the light entered. Physical

wreckage is sad, but a broken spirit beating against the iron bars of circumstance is a sorrier sight. Recognition of this truth was a harbinger of happiness. The body may be enchained, but the spirit may be free. The mind shall not be denied its joys.

Such thoughts came to me suddenly with vivifying force at the end of a tempestuous period during which I had realized, in all its stark horror, that the life which was of importance to me had gone out on a wild sea. In addition to this I was then engulfed in a great personal sorrow. It was as though a voice within had said, "You are the captain of your soul and you can guide your craft anew; happiness remains, only the emphasis is changed; people are here to be concerned about, and there still is something you can do, while underneath it all there is a purpose." Moments of illumination come to us all. Mine came at that time and I realized that a broken life could have its satisfactions. Happiness was then in the offing. Looking back through the years that have intervened since my mind was first soaked in desolation and despair, I am charmed with the vista of peaceful pleasures. For this reason I want to formulate for others the simple principles that saved the day for me. There is nothing new about them except their application to a given case, and for this reason they may bear re-statement.

1. Dejection is the lot of a sodden soul and has little to do with physical conditions or material things. "I am the captain of my soul." Mastery is mine when I recognize this truth. I do not claim that the human will can effect bodily changes. If it could, I would not be seeking an adjustment to disability; there would be no disability. The will, however, can determine the mental reaction to adverse physical conditions and make life worth while in spite of them.

Happiness is contentment, and contentment is adaptation. How to make our adaptation then is the problem. It can be done. The fabled quest for the shirt of the happiest man in the kingdom profited nothing. He was found to be shirtless. He had "adapted" himself without a shirt because he had a singing spirit. I may never more feel the good ground beneath my feet, but no one can keep me from traversing the wide spaces in imagination. Contact with the cool earth is for others; projection of a spirit along glad paths is mine because I will it so. I am no longer buffeted about by vain regrets of what might have been; I am buoyed up by what can be.

An aged man once called on me and his first question was, "Do you get anything out of life?" "Yes," said I, "do you?" He replied, "Of course, but that is different. You are helpless while I am free to come and go." He did not know that my spirit goes adventuring into regions he knows not of. I would not change places with him though he can stagger from his limousine to my door. He broods first that death approaches and then because it does not come when neither matters. He worries when some stocks rise, and when others fall. Such things are beyond my ken but they swamp that traveler's soul. The invalid journeys along over a hard road, sometimes very rough in places, but if he will look at the scenery along the way, he will find that it is often good. To jog along and not see things is the lot of a sodden spirit, but to suffer and bump and jolt and see, that is adventure of a high order.

2. Happiness is everywhere for the taking. There are those who travel far for happiness when, if they only knew, it is just around the corner, often hidden in the trivial. My friend on pleasure bent is chasing the ever receding horizon in his high power car and overlooks my joys. I see the crocus in the way-side park, the anemone in the grass, the sparrow in the snow, the wren building in the springtime, the spider walking its tight rope, and the ant running around its hill. These delightfully intimate sights are mine, while my friend, speeding over long stretches of road, sees only gasoline stations. I, too, should like to wing through space, yet I find adventure by the roadside. That dignified wolf hound strolling down the street is my friend, and the sportive young setter chewing the last bit of his master's galosh entertains me by the hour. The ownerless cur making its way among the garbage pails is full of interest, too, and the alley cat is wise as wise can be. The pony tethered in the corner lot is a comforting sort, and so are all the children and the grown-ups along the way. Never a dull minute do I have. My tortured body writhes at jolts, but we cannot turn back, for farther on our friend, the gray squirrel, is waiting for us with waving tail. He knows we have some nuts and it would never do to disappoint him. And Bruce, the proud Airedale, guarding his master's gate, knows I have a little bone for him. To have someone watch for your coming, ah, that is life! I know some haughty spirit is saying that I am much concerned with the common-place, and am distorting the values of life. My values are not distorted. Real happiness lies in garnering glory from the commonplace. Adventure into things afar is more spectacular; the

enchantment of distance enthralls us, but it has no more of witchery than the wayside paths. Life among the little things is the common lot, and the one who fails to find enjoyment in this is stupid indeed.

3. The world is full of friendly people. Constant contact with others is one of the great deprivations of a person condemned to inactivity, but he can learn that there is surprising interest in merely watching the world go by. Meetings with people in unexpected places frequently yield abundant enjoyment. I am thinking of hospital sojourns, for example, and the free, untrammelled words that fall spontaneously from the lips of those returning from the land of ether. They are always refreshing. Never shall I forget the day the pious churchman called out to the listening walls from beneath his enveloping sheet that he used the home mission funds in a poker game. To me it was an intriguing declaration, but to the white-robed creatures flitting about it passed unheeded; yet later, when a girlish voice confided coyly that she loved Tom, they were convulsed. The mere matter of making off with church funds was grim prose to them compared with the poetry of loving Tom. A woman once called out to those of us still conscious, on the passing carts, that her husband was a good man, next to God, but Oh, how he got on her nerves? Merriment is a happiness potion and I quaff it where I can. This is my inclination and it helps me on my way.

Even though one is shut within four walls there are people all about; they come on the printed page, and fill up the lonely places. One can keep a suffering body under by listening to the friends in books. All the enthusiasms of life are there. There is interest, too, in the people who pass. They go their more or less mysterious ways, and I am off in interested speculation. Freed from the emotions born of competitive life, child-like, I look upon all people as my friends. And the cultivation of friends is, I believe, the main business of Life. It is the extension of the friendly spirit alone that can save the world from greed. And in this the physically handicapped can participate. Children playing on the street are also a connecting link with life; their joyous abandon communicates itself to me, and I am building castles, too. Then there is always the delight in the real friends whom one cannot often see because they are burdened with their own activities and worn by the frictions of life; but the knowledge that old friends always remember and sometimes come is an elixir. Through friends, I keep

my grip on the great world. I participate through them in its joys and sorrows. Through friends my horizon widens. And I feared when I was stricken that it would narrow to intellectual suffocation. Stereotyped forms of happiness have us in their grip till some cataclysm gives us a glimpse of new patterns. By an exercise of will beauty can be read into new combinations.

4. Something to do is a milestone on the road to happiness. To one who has had work that was a pleasure, this is a platitude; to him who has toiled without joy, it is stupid sentimentalism. But to one who has gone through the crucible of suffering, and is no longer able to grace an occupation, there emerges the strong belief that even the flimsiest avocation can contribute to mental well being. No human creature devoid of any task can reap enjoyment from the days that pass. Work is one of the permanent satisfactions of life. Something to do that links us to the rest of mankind is a desideratum. It is only through work that life can be more than the mere passing of time. An activity, however frail, has its blessed uses. Some one thing that is mine to do makes a personage of me; it dignifies me in my own eyes. To use a fly swatter effectively might preserve a man's reason. I hug my little job to my heart and go smilingly along my stony and narrow path. And thus I find happiness. Persons ambitious for high position will regard me scornfully, and scoff at the value of trifling things done in obscure places. In the end there is no difference. Happiness lies in doing acceptably the thing that can be done. I know that a great content steals into the human heart when one makes even a slender contribution to the work of the world. There is in addition the glad warmth of spirit that comes from attempting. Not to attempt means to let the mental powers atrophy; it eventually means intellectual death. Keeping the lamps of the mind trimmed and burning in spite of a disabled body requires courage, and nothing supplies the needed courage better than work.

If I am the captain of my soul and direct my own course; if I gather happiness from the little things that lie along my path; if I find joy in friendship; and if a small task exalts my spirit, is my happiness thereby complete? In answer to this question, I am constrained to add another link in the chain of my contentment, and this is

5. The recognition of a purpose in creation. Life came from chaos, but it proceeds to order. The universe itself is my evidence. All things have their place in the scheme of the whole;

the body though crushed by disease doubtless fills its niche. Dead leaves have their uses. With this I am satisfied, and happiness is mine.

Life is a resplendent thing; we can not withdraw from participation in it unless reason totters on its throne. It is cowardly to hide behind physical ills or sorrows. I am a part of a reasoned social process, and I shall not shirk responsibility even though disease has me by the throat. Physical disaster brought me to the parting of the ways. On one side was bleak despair; on the other was compensation, yes and joy, else what is a will for? Surgeons' futile knives may cut and cut again but they cannot take away the capacity for happiness.

Now as I look about, I see clearly that the things which have brought me calm, will bring peace to any traveler. I passed through my Gethsemane to find some guiding principles to carry me over the hard places, and I found sure milestones on the road to happiness. The recipe is good for all in health or in affliction. It sometimes takes a cataclysm to make us see things in their true perspective and learn that the simplest experiences of the race contain the essentials of deep content They are quite apart from achievements that win recognition; their very simplicity enthralls us. Life is something sweet and strange if we would make it so, too precious to be lost before the depths of Lethe engulf us. Suffering is not futile if it can teach us that beside even the still waters lies happiness.

THE RELIGION OF A NATURALIST.

BY WILLIAM E. RITTER.

"TESTIFYING" plays an important part in the practices of many religions. This is in accord with the psychologically sound maxim that confession and profession are "good for the soul." I see no reason why the principle should not apply to the religious experiences of the naturalist as well as to other kinds of experiences by other classes of people.

My religious impulse is by nature just about average, I judge, as are my natural endowments generally. It seems to be neither exceptionally strong nor exceptionally weak. Oliver Wendell Holmes once remarked about his own religious needs that there was a little plant in his nature which needed watering once a week; and that he found Sunday morning a convenient watering time. This fits my case very well.

As a boy I knew little indeed of formal religious observance and still less of such discipline. Country churches and Sunday schools and preachers, though not wholly absent, were rare specimens sure enough in the part of the Badger state where I was born and nurtured. I never saw a religious service of any kind until I was more than half grown. My earliest glimpses of the religious life were confined to the little family group. At the very threshold of memory stands the soul-terrifying warnings of the "wrath to come" thrust into my tender mind by a grandmother only a generation removed from New England Presbyterianism at its worst.

As a fairly successful offset to this stands the larger, more continuous influence of a father who could hate pretense more earnestly, love justice more sincerely, walk uprightly more surefootedly, and make less noise about all, than—well—any other father I ever had at least. So notable was he in these ways that he fell

under condemnation by the one church organization in the neighborhood, of being "worse than the Devil" because a moral man. But his occasional slips toward spiritualism and universalism and his enthusiasm for Ralph Waldo Emerson whose one lecture he heard seemed to have been a red-letter day in his hum-drum life, undoubtedly enhanced the sin of his moral goodness in the eyes of these neighbors.

Then there was the influence of a mother whose watchfulness over her brood and efforts for them always partook, as I now know, more or less of the nature of religious service. A person, was this mother, whose daily life was such that even had I been fully instructed about angels, I could hardly have felt them of much practical importance to me.

The years of my peregrination, corporeal and spiritual, that intervened between the final break-up of the old family group and the establishment of the new, brought the experiences, quite typical, I think, for young men of that period who were touched by the breath of learning.

We all took a few swallows from the Spencerian fountain then flowing with full head, and fewer still from the Darwinian fountain, also at full flood. And there was the intellect-enthralling doctrine of conservation of energy to be reckoned with in any sort of religious adjustment that could be attempted, John Tyndall being for us the major prophet in this realm.

As for coming to close quarters with religion itself—well, about the best we could do was to go to church on an occasional Sunday, and on week days sit on the bleachers and watch with a bewildering mixture of satisfaction and disgust, Colonel Bob Ingersoll while he battered the face of poor Moses for making mistakes now and then.

Through most of this period of varied but in no wise extraordinary outside influences, I remained quite unconvinced as to the significance and value of participation in public religious exercises and identification with religious organizations. But the noonday of life brought me into church fellowship. This I have maintained with varying degrees of value to myself and service to the organizations which have taken me in, and undoubtedly shall maintain to the end. That I have recently felt it necessary to change to a less firmly creed-held society than that to which I originally belonged is significant here only in its bearing on the controversy over evolution which now shows signs of refilling the whole intellectual sky with light and heat. The renewal of this controversy I believe to be much more

important than it seems to be considered by most persons of learning. From a moderately skilled examination of the new controversy as it has so far developed one can forecast a quite different alignment from that which most characterized the old controversy.

Speaking broadly, the line of cleavage in the contest brought on by "The Origin of Species" was between natural science and theology. On one side were the great torch bearers of natural knowledge, while on the other side were those eminent in maintaining the doctrines of traditional Christianity.

The indications are that in the on-coming controversy the cleavage line will run at right angles to its former position, and will cut square across it. The result of this would be that on each side of the line both scientists and religionists would be found, the cleavage being between open-mindedness and liberalism on the one hand, and shut-mindedness and dogmatism on the other. On the one side will be, it seems, liberal religion and liberal science, while on the other side will stand dogmatic science and dogmatic religion. And what ought to contribute largely to quick and decisive victory for those on the open-mind side is the fact that it should be very easy for all those on this side whether scientists or religionists, to work hand in hand so far as this controversy is concerned; while on the other side there can be little or no common ground. It is in the essence of all dogmatism to exclude all other dogmatism. If different dogmatisms can be on mere speaking terms with one another that is all that can be expected of them. They can never work together.

Whatever chance there may be of value to others as well as to myself in this testimony of mine is dependent upon my being personal still further. I shall have to go into a little detail on my solution of the problem of my own public duty toward religion. This will involve a brief look at the groundwork upon which the solution rests.

To me the normal, the naturalistic, starting-point for the solution is the question: What is the place, what the function, of religion in human life? And this, asked naturalistically, must be understood to refer to religion not merely in its developed or actualized form, but quite as much in its incipient or germinal form. It must really concern the impulse to religion more than the *patent manifestation* of it.

Now, the mode by which the naturalist must seek to answer this as all questions is well known: He must seek the evidence.

The evidence in this case is from three sources; from the *historic* or racial source; from *contemporaneous* life—the side of objective individual experience. And finally from the side of the "inner life." Here the seeker must dive deep and swim hard if he would know the vast ocean of reality into which he is plunged.

On the historic side the evidence is now so vast and so easily accessible that very little time devoted to it will carry us far.

I quote: "The fact is that there has not been a single tribe, no matter how rude, known in history or visited by travelers, which has been shown to be destitute of religion, under some form. . . .

"Religion, therefore, is and has been as far as history informs us, universal in the human race."

This statement taken from Daniel G. Brinton's "Religion of Primitive Peoples," epitomizes a generalization than which no other, I believe, concerning the psychic life of mankind rests on a solider foundation.

From the side of individual experience, we must, it seems to me, accept such works as William James's *The Varieties of Religious Experience* as confirming our own impressions that the germ of religion is present in every normal man, woman and child. But if the religious impulse is thus inherent in human nature, as a naturalist I see no way to avoid recognizing certain consequences of the utmost importance for human welfare, but which are rarely and imperfectly recognized.

For one thing, it would follow, that the old notion of becoming "converted" and of "getting religion" is almost sure to be, indeed usually has been, disastrously misunderstood. A person may be said to "get religion" only in much the sense that a lad may be said to get a man's voice at a certain time in his life. Undoubtedly the state of latency or part-latency of religion in one's constitution is much more subject to external conditions for being brought to actuality than is the heaviness of the male voice in the young boy. But if the generalization above indicated is correct, religion is no less potentially present everywhere than is the manly voice in the boy, however unrecognizable it may be.

Now this means, stated in the naturalist's language, that the religious impulse is hereditary. It is instinctive. The germ of religion is in the germ plasm of the human species. This truth carries with it another of great practical importance. It is this: In accordance with a fundamental principle of biological development, if the egg, or germ, develops properly, it develops *as a whole*. That

is if any of its potentialities become actualities they *all* must and will preserve due balance. Otherwise the outcome is an abnormality. Now such faulty developments are well known especially to embryologists. When the incompletenesses are striking they make what are called monstrosities.

But such incomplete development may pertain to the mental or spiritual potentialities of the human organism quite as well as to its physical potentialities. Consequently, abnormalities and monstrosities occur in mental or spiritual life as well as in physical life. Innate mental defectives of many kinds and degrees are illustrations of this too familiar to us all. The psychopathic clinics are where science learns most about them.

Here still another principle must be called in. I refer to that principle in the mental life of human beings according to which impulses and emotions become detached more or less completely from their original objects and attached to others alien to them in some degree. This appears to be the essential thing in the idea of "transference" rightly taken much account of by the Freudian school of psychopathology. Familiar illustration, falling short of real disease, is seen in the abnormal affection which childless women and men sometimes bestow upon dogs and other animal pets.

Now for my main point: Since the religious impulse is bound to develop in some way, i. e., to express itself in some sort of response, if it does not go in its original or normal direction it will go in some other or abnormal direction. And this means, when stated in a nutshell, that if any normal person supposes himself or herself without religion and not needing any, that person is probably "making a religion" as we say, of some lesser object or interest than that to which the religious impulse naturally pertains. And so we see politicians making a religion of their party; business men scantifying some business project; scientists deifying some pet theory; artists idolizing their peculiar creative powers; social reformers worshipping in the temple of Socialism or social service; and so on and on. In no domain, probably, has man been more wont to make religion than in that of effort for relief from bodily pain and disease. The seeds of idolatry whatever its form or name is right here, I am quite sure. Magic, animism, ancestor worship, etc., are rooted in this same soil almost certainly.

Now, do not, I pray, fail to catch the real point of what I am saying here.

The idea implied in what was said a moment ago that if the

religious impulse does not go in the right direction it will go in the wrong direction, will almost certainly raise in some minds the question: But what *is* the *right* direction? In other words, they would inquire: What else are you presenting us than the ancient problem over which so much bad temper and good blood have been shed, that of what the *True* religion is.

If, however, my words be closely scrutinized it will be found that the issue they raise is very different from this very old and very bloody issue. The question I raise is that of religion or no religion as compared with the old question of which among two or more religions is the right one. And the difference is far reaching.

These statements bring me to the culminating point of my personal attitude and action with reference to religion. I think it will readily be seen that, holding such a conception of religion as that indicated, I could not consistently avoid, even if I so desired, a clear, open religious profession of some sort.

Stating the case more specifically it is this: My professional life interest is science—the sciences of living nature. This being so my nominal renunciation of religion would probably result in the actual transfer of my religious impulse to my science or some segment thereof, even though I were quite unconscious of the fact. At any rate so great are my claims, especially latterly, for the importance of this group of sciences to human welfare that I would be open to the charge of trying to substitute my science or some phase of it, for religion.

I may sum up in this way: *So profound is my conviction of the importance of both biological science and religion, each in its own way and right, for human life, that I cannot run the risk of supposing or being charged with supposing that either may supplant the other without incalculable harm to mankind.*

Let me illustrate what is implied by this: Imagine me to have espoused the eugenic faith in the extreme form in which it is held by a considerable number of well known biologists and sociologists. Imagine me also convinced, as several Americans seem to be, that human excellence reached its apogee in Nordic germplasm. See then what could easily happen in accordance with the principle of conceptual transference noted above were I irreligious by proclamation. My family name, my stature, complexion, known geneology, etc., being what they are, it is probably that I should use my science to convince myself of my Nordic lineage, and then allow my religious impulse to make me a sort of Eugenic Shintoist, my household shrine being dedicated to my Nordic ancestors.

It is incompatible with man's highest good to "make a religion" out of some one or a few interests, as for example eugenics in opposition to education, since this would be to divert to the service of *one*, energy which of right belongs to both.

Such diversion would be like using all the water in the reservoir for irrigation and none for drinking and other domestic purposes.

Viewed psycho-biologically religion is seen not to be science, and science not to be religion, but each a complement and fulfillment of the other.

Religion is the common magma of all emotional life, as science is of all rational life. Religion is the individual's one great reservoir of spiritual energy and as such must be freely available for each and every one of his special interests and activities. True religion sensitizes all man's powers of perceiving, energizes all his powers of action, and expands and deepens all his powers of imagination.

AN UNPUBLISHED INTERVIEW WITH THE LATE DR. GEORGE BURMAN FOSTER ON THE FUTURE OF RELIGION.

BY J. V. NASH.

NOTE: The late Rev. George Burman Foster, Ph.D., LL.D., was for many years Head of the Department of Comparative Religion at the University of Chicago and a widely known religious liberal. Dr. W. W. Fenn, Dean of the Harvard University Divinity School, declared him to have been, at the time of his death in December, 1918, the greatest theologian in America, if not indeed in the whole world.

IN MY article appearing in the Open Court for June, 1922, I gave some account of the life, personality, and philosophy of Professor Foster.

I had long known of his great reputation as a liberal thinker and the fierce opposition which many of his utterances had aroused in the ranks of Protestant Orthodoxy. As a religious inquirer of Roman Catholic antecedents, I was naturally interested in learning at first hand Professor Foster's views on the religious outlook in the light of the Great War, which, at the time of my first meeting Professor Foster, had been in progress over a year.

In the autumn of 1915 I requested the privilege of a personal interview, at which I might ask him certain questions. He invited me to call at his home. I did so on the evening of Monday, November 15, 1915. I had prepared in advance a list of questions, which I read seriatim to Professor Foster, taking down his replies in shorthand. The report of the interview, hitherto unpublished, follows:

Mr. Nash: Professor Foster, what is your idea of the mission of Christianity in the world to-day?

Professor Foster: To aid in the formation of free and independent personalities, and a kingdom of such personalities in which all are ends and no one mere means, the relationship among them to be one of mutual love and service.

Mr. Nash: What do you think will be the effect of the present war in Europe upon the future of religion?

Professor Foster: I think that the outcome of the war religiously will be to a large extent the discrediting of the traditional, dogmatic, and ritual Christianity, and the emphasis upon a religion of moral principles and of life in the spirit of Jesus. The ecclesiastical type of Christianity has broken down. We shall have an ethical and social type, in which moral values of spiritual freedom and brotherhood are supreme. Dogmatic Christianity could not keep from this war, and I don't think it can very well survive it. The old international Christianity is gone, and it is only by a restoration of spiritual brotherhood that the unions of peoples can be effected, not by dogmas and cult. I feel that that is the quite obvious outcome of the war.

Mr. Nash: Should the Church have a theological creed?

Professor Foster: I think the day of any kind of coercive creed as a basis of religious fellowship is past. That doesn't obviate, however, the personal need of intellectual convictions with reference to religious realities.

Mr. Nash: Modernism believes in the spiritual, but not in the supernatural. Is that a logical and tenable position?

Professor Foster: What do you mean by the supernatural?

Mr. Nash: Magic and miracle—interferences with natural law.

Professor Foster: I see your point. I think it is.

Mr. Nash: President-Emeritus Eliot of Harvard prophesies that "in the religion of the future there will be nothing of the supernatural." Is it, in your opinion, likely?

Professor Foster: Yes, all that sort of thing must go. But for all that, Nature is richer than the reports which science can make of it. Nature is a wealthier reality than can be gathered up in our cause and effect categories. There is room for appreciations as well as explanations, and so I am not content with Nature as supposed to be exhausted by science judgments. It is richer than that. There are emotional reactions that are valuable as well as intellectual reactions. I would not accept naturalism as usually

defined, any more than I would supernaturalism, and I discuss that matter in the first few pages of the sixth chapter of *The Finality of the Christian Religion,* where I show that a religion without supernaturalism and a science without mere naturalism will be our modern redemption. The spiritual is not exhausted in our naturalistic categories, and it does not require the affirmation of the old supernatural categories. The spiritual is as orderly as the natural.

ON THE STRENGTH AND THE WEAKNESS OF DESCARTES' "METHOD."

BY ERNEST A. NORRIS.

IT HAS been said that no other investigator in all the past adopted a method of investigation which contained in itself the promise of more fruitful results of an ultimate nature than did Descartes' "Method." And it might be added that no investigator gave a weaker support to a sound method than he did.

His *Geometry, Meteorics* and *Dioptorics* which he thought to be specimens of truth reached by this method were in reality due to his original mind, his rejection of post futile methods. He saw that the past was a slavish submission to authority, with a few exceptions. This revealed to him the necessity of adopting a *critical* attitude towards all former methods or opinions in relation to the nature of mind or the nature of knowledge. He seemed to have seen that no advance regarding problems of ultimate nature can ever be made until a completely rational theory of the nature of knowledge is first reached. He seems to have devoted a great part of his life in preparing himself to deal with this most subtle of all problems. While his assumptions of "doubt" might now be considered as the first step in a critical attitude towards all past conclusions regarding what knowing *is and what it is that knows*. But it will be shown that the Descartes' mind was unable to free itself from age-long habits of thinking which involves what is now termed ego-centric predicament.

This mental collapse of a great mind after a lifelong preparation to avoid it, should give pause to the bizarre methods of philosophical investigations now taking place.

Says Descartes in this connection, "But as I desired to give my attention solely to the search after truth I thought that a procedure exactly opposite was called for and that I ought to reject as abso-

lutely false all opinions in regard to which I could suppose the least ground for doubt, in order to ascertain whether after that there remained aught in my belief that was wholly indubitable.

"Accordingly seeing that our senses sometimes deceive us and I was willing to suppose that there existed nothing really such as presented to us. and because some men err in reasoning and fall into paralogisms, even in the simplest matters of Geometry *I,* convinced that *I* was as open to error as any other, rejected as false all the reasonings I had hitherto taken for demonstrations; and finally when *I* considered the very same thoughts (presentations) which we experience when awake may be also experienced when we are asleep, while there is at that time none of them true, *I* supposed that all the objects (presentation) that ever entered into my mind when awake had in them no more truth than the illusions of my dreams."

So far, except for the confusion to thought by the use here of personal pronouns which assume a person as well as a mind at work, this procedure of Descartes may be considered as philosophically justified.

But the non-recognition of the necessity of discounting the ego, self or person, and mind understanding itself as such all through its investigation of itself, is the cause of the breakdown in Descartes' synthesis as will now be pointed out.

"But immediately upon this *I* observed," says Descartes, "that whilst *I* thus wished to think that all was false it was absolutely necessary that *I* (this is the use of the "I" as a mind body concept, as a somewhat that can confront mind) who thus thought should be somewhat and as I observed that this truth *I think hence I am* was so certain and of such evidence that no ground of doubt however extravagant could be capable of shaking it, *I* concluded that I might without scruple accept it as the first principle of the philosophy of which I was in search."

Just here is where Descartes' reasoning powers gave out. This formulation is a mere tautology—a repeating of the same meaning with words differently arranged. As such it was true, of course, a true repetition and so quite useless as a "Principle" of anything; for since it was true as a tautalogy, it was not true as a matter of fact. If he had employed the formulation, mind thinks, hence it exists, it would have been near the truth, but it would have still been a tautalogy for the very fact of asserting mind thinking involves the implication that mind exists; else the asserting would be nonsense,

and so formulated in this way it could not be made a principle of philosophy, yet there is something very valuable here and which might serve as the foundation for the building up a science of mind, with an explanation of the nature of knowledge.

The two facts which should have been developed are:

(1) thinking in some way goes on,

(2) and in some other way awareness of that thinking takes place.

Now when there are two facts that can be held in their bareness without any further implications whatever, a rational beginning can be made for a metaphysical science and a new world of thought be opened up. But on account of the age-long bias arising from practical ways of thinking (this is what Descartes should have brought his "doubt" to bear upon in its complete sense, and should have included the doubting of the "I") not only did Descartes not do so but there is no record heretofore of these two facts being grasped in their *bareness,* that is, without the implication of a personality or self as the experiment, with the further assumption of a *given* physical world, and yet these two latter somewhats do not arise independent of, or simultaneous with the knowledge process but are built up out of this process when it has reached a high stage of complexity, apparently. And it becomes the business of metaphysics to inquire how a self ego, or concept of personality arises out of the knowledge process.

The story of the building up or organization and development of the mental life is the most wonderful story the human mind ever can or ever will have to deal, and yet it has up till now been almost wholly neglected or distorted.

In another place an attempt has been made to tell this story but the methods of investigation now in vogue prevent a hearing of any views embodying greater depths of thought.

The unconscious use of the "I" sometimes as mind and sometimes as a person or self which is able to discuss mind as if it was a substance or element foreign to this self seems to cause such confusion in the Descartes mind as to compel the falling back for support on all which his critical mind had rejected, as here shown.

"In the next place from reflecting on the circumstances that I doubted and that consequently my being was not wholly perfect (for I clearly saw it was a greater perfection to know than to doubt, I was led to inquire whence I had learned to think of something more perfect than myself, and I clearly recognized that I must hold this notion from some nature which was really more perfect."

It may be readily seen that the two conclusions reached here were quite unwarranted by his earlier method of investigation. For in the first place doubt is the great necessity of thought in investigation. Investigation would be useless if reliance wholly on authority is to be made; the very thing that Descartes had fought against in his earlier investigations.

Then again Descartes need have no reason to wonder whence he had learned to think of a somewhat more perfect than himself if he had recollected what he had been taught in early childhood, or had heard of that prelate who said, "Give me the children to train and I will have no fear that the grownups will depart much from what I taught them in childhood. They may forget the source, but the substance will be determined by the way the mind was moulded in childhood although it may be somewhat distorted at times."

". . . Accordingly," Descartes continues, "it remained that it had been placed in me by a nature which was more perfect than mine, and which even possessed within itself all the perfections of which I could form any idea, that is to say in a single word, which was God."

Here all evidence of a great mind at work seems to have entirely disappeared, with the sudden fall into habits of thinking which he had fought against in his earlier life.

It is sad to think of Descartes on the very brink of the greatest discovery that could ever be made by the human mind, namely, the discovery of itself, and then to be suddenly thrown back on such frivolous argument through the use of inapplicable terminology, apparently the result of his early training, which he appears to have forgotten.

It is not essential to postulate *mind body* or *self* to commence metaphysical investigation. What is required to bring out. is (1) what awareness reveals of this knowledge-feeling process; (2) can a rational account, by putting things together, of how a physical world and a self gets built up in the knowledge process, and (3) how it finally develops as a real world to all appearance in that highly organized psychic process which gets itself termed the human mind?

The answer is that all this can now be worked out by the intelligent mind free from bias, and the process becomes amazingly interesting and productive of some good results.

And has the mind become known to itself, appearing physical existence become the great mystery in an ultimate sense, since it

is born in the knowledge-process and what it is outside of that, no mind can ever know.

But the human mind can learn how it (physical existence) arises as an *appearance* from peculiarities of its own (minds) operations, and this, worked out, would constitute a real science of mind. But this may never be fully worked out as philosophical thought appears now to be in a state of decadence, and appearances are taken for realities.

Philosophical thought has thus reached a stage of decadence which might be comparable to science going back to appearances and maintaining that the world is flat and the sun moves around it. Behaviorism does just this.

"Things are what they seem to be, it is absurd to deny this." "*We* do not find consciousness (mind) and a physical world but only a physical world." There is not the remotest conception that mind is here assuming the ludicrous *attitude of denying itself*. Mind as the knowledge content maintaining that this content is physical or biological movements, but never getting down to the question as to how *this knowledge arises* or can arise from such assumptions. Thus the real philosophical question is slurred over. That all such questions are metaphysical however handled, or however crass metaphysics it may be, since they are, or should be, a part of the content of the knowledge process; never seems to dawn upon such minds.

When penetration such depth of thoughts is made the absurdity of their procedure would at once become manifest.

While the strangest part of it all is that those who have pursued physical research to its furthest limits are fast coming to the belief that it is *all mind*.

[1] "And in the same way the existence of any one of these qualities of the world only acquired significance about its fellows, if mind singles it out for recognition, *mind filters out matter from the meaningless jumble of qualities* as the prism filters out the colors of the rainbow from the chaotic pulsations of white light . . ."

Is it too much to say that mind's search for permanence has created the world of physics?

The conclusion is that the whole of those laws of nature which have been woven into a unified scheme—mechanics, gravitation, electrodynamics and optics—have their origin not in any special mechanism of nature BUT IN THE WORKING OF THE MIND.

[1] Eddington in "Space Time and Gravitation."

"Give me matter and motion," said Descartes, "and I will construct the universe." The mind reverses this: Give me a world, a world in which there are relations—and I will construct *matter and motion*. We have found a strange foot-print on the shores of the unknown. We have devised profound theories, one after another, to account for its origin, at last we have succeeded in reconstructing the creature that made the foot-print. And lo! it is our own" (mind).

PHILOSOPHY AND THE UNIVERSE

BY HARDIN T. MC CLELLAND.

CONSIDERING that Philosophy has adequate means for getting at every phase and function, fact and relation of the Universe is like the perennial promise of my venerable mathematical professor who used to say that when he wrote his textbook of algebra he would show that there were no surd irreducibles, that the only irrationality or deficiency in the matter was that of our own methods of inquiry and analysis. Hence I will not here claim to either affirm or deny that there are probably any surd unknowables in the Universe, even tho our knowledge and powers of faculty are at present very meagre and impotent. Rather it would seem equally probable after the mathematical analogy that under proper procedure of observation and interpretation the Universe presents nothing irreducible or unknowable, that the mere fact of any particular thing's existence and presentation signifies knowability and integration in *some form* of sentiency or intelligent experience. If reality and truth as the rational integrity of the Universe are at all presentable in terms of sentiency and intelligent experience then any item of similar nature will under proper conditions be conceivable and knowable.

Thus there always seems to be a certain fitness in choosing phrases which give a conceptually knowable relation between the two words Philosophy and Universe. This is the idea and intention clearly defining my choice of title for this article. It is meant to be a significant token of conscious esteem for the propriety of intellectual honesty, aspiration, justice, openmindedness, clear vision and the indefatigable pursuit of such wisdom and dignity as befits the beautifully good and true. Man's estate is fashioned from the pattern of things above his petty self and is subject to such laws of

Nature, Mind and Spirit as relate thereto. Accordingly, and with as little reversion of terms and meanings as possible, I have taken three main viewpoints into consideration in my interpretation of this fitness, aiming to discover the grounds of their relation and show that a certain progression of significance may be attached to the three great functions of Philosophy, viz. the Historical, the Critical, and the Creative (or Genetic).

I. The Historical Function of Philosophy.

It may seem bromidic to say that Philosophy was of historical service to mankind long before it had any critical value or genetic significance, but we often find ourselves required to take retrospective inventory of our powers before we really know whether we are debtors or creditors of the world. The skillful application of Philosophy to the problems of life and cosmos is one of the highest sublimations of genius, and genius performs functions more often thru spontaneous decision than thru hereditary inclination. Otherwise there would be no progress and no history.

The historical function of Philosophy then has been invariably featured as faithfully attending the more or less melioristic progress of our intellectual outlook on the Universe. Despite the occasional retrograde sampling of ennui and pejorism its constant redeeming value has been its convalescent power to clarify and validate what few elements or expressions of truth lay hidden in the obscurities of adolescent experience and speculation. It supplied among other things a definite point of view from which to survey and map out the course of human civilization as it has so far made progressive achievements in Science, Education, Religion, Ethics and Art. Without the foraging and heroic courage of Philosophy in times of intellectual famine the humanities would long ago have perished and slipped into oblivion. Historical schemes which aim to grasp and support the whole panorama of life, giving it a systematic continuity or at least a pragmatic sanction, are one and all eristic of the absolute and hope to be arbiters of the final code. The whole gamut of our intellectual lucubrations including the classical protagonists of venerable controversy—rationalism and empiricism, materialism and idealism, naturalism and humanism, monism and pluralism, determinism and opportunist casuistry, romanticism and academic lore—is full of accidentals, sharps and flats not always harmonically placed and which therefore grate the finer tastes and discriminations of the elect.

The strict logician is still a defective thinker if he rules out the

romantic element of emotion and dream from his ivory tower of mathematical truth. The materialist is often worldly and blind to the brighter visions of the ideal moral order. The naturalist cannot argue defensibly that we are parts of Nature in origin and destiny when the majority of our functions are incorrigibly finite and humanistic. The determinists, like the romantic poets of better times, are too well versed in their own aggressive creed to countenance any note of novelty or decadence in their symphony. The modern rule seems to be that of superficial reflection, selfish utility, and unscrupulous opportunism. It is a sad reminder of how utterly unphilosophical is folly and extravagance, corruption and greed, for it is a delinquent scheme of life constantly faced by failure and harassed by intellectual bankruptcy. The periods of decadence now and then hyphenating our otherwise continuous upward progress are inexorable streams of force playing against the test walls of our historical stronghold, and bare traditions of glory or intellectual achievement cannot fully cover the cracks of weakness so prophetic of an early dissolution. We are not only becoming inveterate triflers but irresponsible speculators as well, and the fact that we lose face oftener by dint of moral defect than by intellectual overreach does not minimize our actual responsibilities in foreview of a philosophical outlook on the Universe, even tho the interpretation of this outlook can vary with every different viewpoint and resurgent power of faculty.

One of the poorest hypotheses of our modern but largely pseudo-elite *seicle des hochets* is that which masquerades under the misnomer, mechanisticism. This is an out and out confessional of the automorphic pathetic fallacy and thrives only by the fortunes of a climated nativity in a vulgarian and mechanically devout age. No wonder it is so popular as a pseudo-philosophy in a world so given over to industrial exploit, mechanical invention and general machine-morality. Contemporary salons of civilization, even, are demanding that the specific effect of all our thoughts or notions, aims or actions be orally demonstrated before any of the causes, desires or ambitions be acknowledged as appropriate or even worth consideration. Our peculiar defect is the moral and intellectual decadence springing from our loss of spontaneity, vision, romanticism, et al. We are grown so mechanical, inane, sterile and pedantic (as witness our music, art, literature, home-life; our very hedonism, extravagance and superficial satisfactions) that the *naivete* of the Universe has been lost in the clever shuffle. We have

lost naturalness in the maze of our modern artificiality; we have grown corrupt in our own machinations against others. The result is that it is now popular to look upon life and the Universe as a vast machine which grinds away at the clumsy compressor-function of producing material forms instead of spiritual energies—an archaic affair which any shrewd sophist shirks and ridicules.

The educational programs of modern humanism and the philosophical prologs of its devotees both fail to account for their own failure to release man's restless spirit from the bondage of a misconstrued past, a past whose wealth of experience equals and often outvalues that of our own, whose authority consisted mainly of spontaneity and naturalness, rather than precariously depending upon the mimetic stereotypy of books and crumbling monuments. These programs and prologs are sufficiently devout with all the fine heritage of historical culture and the valuable adjuncts of tradition, racial temperament, artistic interest and the inspiration of the humanities. But they lack some few elements of the natural discipline only lately found to depend upon creative ideals and the critical values of a non-humanistic viewpoint in science and metaphysics.

Philosophy seeks to vindicate the past, not by recourse to the present, but by comparisons between the finite interests of historical man and the infinite life of an intelligent and melioristic Universe. Philosophy cannot rest with being merely historical and academic, not passively scientific and critical even; rather must it, in order to hold its own against all errors and illusions, be inquisitive and enthusiastic, creative and conscientious, taking count of every favor and protest in the mood of equanimity and just decision. A genuine philosopher will relish the situation which shows him why he should blame his own stupidity rather than God or the Devil for his follies and failures in the natural world. But lo, if he is a humanist all manner of evasion and shifting of responsibility will mark every crucial instant where he comes in contact with eristic opposition. He does not seem yet to have discovered that Philosophy was never intended to be a supplement to the reality or intelligence of the Universe. It is no different than anything else having a self-evident existence; it is a product, a part, an active factor in the life and growth, the aspiration and perfection of the Cosmos.

We all know how uncertain were the grounds on which Swedenborg advanced his inordinate claims of angelic conversations, planetary communication and exclusive personal copyright on

theopathic experience. They are especially discountenanced nowadays from the several scientific discoveries that have been made in psychology, astronomy, metempirics and spirit-tests. It is always a weak link in anyone's chain of speculations to let the swivel bear the brunt of the load, and Swedenborg's ambition to verify the Scriptures lay directly over his power of valid thought. Hence it is indeed a ridiculous spectacle to see men so otherwise meek and sensible using their own pride, ambitious ignorance and petty delusions as analogies for proving this or that function, quality or structure to be of and in the Universe. True enough, all these items are just so many existences in the totality of things, but they are not principles, they are not code for philosophical procedure.

It is well to have some measurable quantity or quality for use as a unit of comparative estimate in all our processes of inquiry and understanding. But this does not authorize us to bring in all our pet delusions and personal biases to make condiment for such réchauffé interpretations. There must be achievement but not submission to mechanism; there must be inspiration but not the artificial stimulus of hallucination; there must be rationality but never the dogmatism of the intellectual dictator. There is a perennial beauty about the Universe which finds its flower in naturalness and upward evolution; not a static ratio of matter and spirit long ago ordained to give us moral either-ors, but a cosmic symbol of purposive intelligence whose subtle anagoge gives our labors and our hopes significance. It is no worry of ours that the Universe is so composed that reason and the good life do not always emerge spontaneously, but it is or should be our most serious concern to forestall the introduction of our own erratic judgments into the chronicle of reality. Any philosophy like Vedantism which regards the gift of human intelligence as merely the destructive apparatus for defending the pessimism of cosmic illusion is as much in error as the process it derogates. It is no more a valid metaphysic than our own modern mechanicalism which demands utility and tangible accuracy of results as sanctions on all education and morality. Little progress, therefore, can be read from those eras of history whose flourishing philosophies were either negative of the Universe or negligent of man's spiritual significance. Neither can any appreciable philosophical progress be made on terms of the humanist's pathetic fallacy and its inevitably anthropomorphic world-conception. On the other hand the one great lesson to be derived from the history of Philosophy is that a meekened mood of self-restraint and an

individually acknowledged submission to Nature's prescribed rules of life are the inner achievements truly initial to any subsequent advancement of wisdom and brotherhood in the external world.

It is such inner achievements as these which counsel us to the belief that there are really existent many functions and values more permanent and fruitful than the ephemeral joys and uses of human life. Many such phases of faith are presented in history: among them may be mentioned the uncaused and nameless Reason of Lao Tzu, the eternal monism of Parmenides, the ideal forms of Plato, the Nirvana happiness of Buddha, the Yoga identification of soul or mind with Nature or Reality, St. Augustine's City of God, the subtle universals of Aquinas, the mathematical analogies of Spinoza, Descartes and Leibnitz, the rational schematisms of Kant, Hegel and Fichte, and the syncretic reconstructions of our great contemporaries Eucken, Hoffding, James, Baldwin, Schiller and Bosanquet. The fact is we have never seriously given the finite and mortal affairs of life the philosophical sanction with which we speak of the Universe, its reality, laws, evolution, persistent facts and non-human purposes.

Still there is a certain metaphysical importance that may be attached to the changing phenomena of Nature and, as with the acrobatic *'liquidation d'intellectualisme* of Bergson, a romantic sort of dignity allowed to the art of philosophical make-up. We should always remember that at first Eschenmayer devoted some of his best energy to the examination and approval of the necessity of non-philosophy (even of ignorance and anti-wisdom, folly and evil); that as long as he was philosopher the arc of truth required just such a balancing complement, but after becoming non-philosopher his activities were of such design as to argue that his arc of truth had become merely the accessory of a weak and superstitious demonism. Leo Errera has very shrewdly commented that the arc of truth is completed only by the honest and accurate *search for truth* which, if not now integral or at least possible of an imminent the cosmic curve, a thing of infinite variation and hypostasis. Dr. integration, is justly to be regarded as the indefinite asymptote of Paul Carus in his masterly treatment of "The Philosophy of Relativity" observes that our precision machines testify to the ingenuity of man's genius in its attempt to eliminate personal equations as far as possible. If there is such a thing as eternal and universal truth it will become known only after we have become able to think independently of humanistic and utilitarian sanctions, when we have

sternly eliminated the rhyomistic passions and illusory suggestions of that corruptor of all philosophies, the ejective self.

There is nothing more fallible perhaps than the often base but always weak automorphism of human judgment, the myopia of seeing nothing but reflections of self and finite interest in everything which that self observes or that interest seeks. Too many of us are like the engineer on Bunyan's Celestial Railway who always dumped his passengers off at the River of Death saying "We go no further." Too many of us carry our thoughts and investigations as far as the river of our solipsisms and then stop abruptly with the engineer's answer either gruffly announced or with hardly less gracefulness implied in our subsequent conduct. The one intellectual vice of all time has been the solipsism and personal equation of practically every item of human speculation and empirical interest. In a more racial practice it is the too ready embrace of any and all things which happen to coincide with the current opinions of the time, and this to the general exclusion of all else, often without so much as a hearing. It is a dangerous motto anytime to boldly announce that "it is I and only I who know the secret door." The personal conquest of this haughty mood is the beginning of all true ambitions toward Philosophy, for it is the first departure toward the open door and infinite generosity of the Universe.

Since the advent of Einstein and the relativists it has become fashionable to distinguish terms more closely, one, for instance, being that singular qualification of the word Universe by prefixing the possessive pronoun "our," meaning such a part or phase of the Universe as we are capable of taking into conscious grasp and conception. The stellar universe is insignificant compared with a whole series of possible universes of another constituency than that which we are accustomed (or by limitation of natural faculty, forced) to observe. One illustration of how an exotic and unorthodox universe may be demonstrated as possible is presented by Prof. Charles Nordmann in his recent book *Einstein et l'Univers* (Paris, 1921) where the two rival theories of infinitude and finite cycles of cosmic order are ably brought together for reconciliation. The socalled "our" universe, in the view of the relativist, may be boundless without being infinite; even an incurved space such as that of Riemann, Gauss or Einstein is no more infinite than that of Euclid, for it is discreet and finite like a sphere or the back of a saddle. And furthermore our knowledge of the actual nature of light and the ether, especially their functions in interstellar spaces, is not

sufficiently accurate and exhaustive to warrant us the ascription of solipsism to "our" universe. Other universes indeed may well be equally existent with our own, but by some cause as yet unknown to us inaccessible and isolated. But we should not assume authority to announce that they shall remain unknown and irreducible to terms of sensible equation. As Prof. Nordmann says, perhaps many of our own stellar attractions are phantom doubles of long extinct stars whose light they are but now seeming to reflect from the opposite pole or visual focus of "our" universe.

First having searched thru the whole visible creation for knowledge we next researched the data of both subjective and objective existence for facts indicative of the basis, use and wisdom of that knowledge. My present intention then is to bring about a certain self-analysis of the cosmological viewpoint, to effect a historical focus on the true purpose and extent of this research. The ancients wasted no time in denying, doubting or occasionally assuming that certain kinds of knowledge were possible, but went ahead with their studies and inquiries in such a way that modern thinkers may well copy their attitudes. This is said in exclusion of those negative and non-constructive viewpoints such as Sophism, Pyrrhonism, Cyrenaicism and their modern revivals in Hume's sceptical sensationalism, Spencer's agnosticism, and Pater's naive hedonism. We have had no leisure wherein to idle over some petty postiche's eristic refutations, nor to seek an illusory solace by attending lectures at *l'Ecole d'Entiae Impractique,* for we were too energetic, too incorrigibly inquisitive, too set on realization.

I have always thought it strange that a universe like the one we know should or could permit the existence of ignorance and folly. It is so otherwise determined to teach us the utter futility and extravagance of such things. Yet I have as often found consolation in reminding myself that it does not permit the *continuance* for long of such illusory existents. For this purpose was disease and death invented—to cut off the fool before he wrought any serious havoc in the world. The Universe is no school for scandal; no infamy or debauchery is counselled there, and we are not by any external persuasion grown corrupt. It is our own passion and power of restraint which are at fault if we are forever impelled by some imperious delusion to exorcize the Good. Still it is often our pet illusions which are the vital lies which stimulate our exertions and goad us on to some desired achievement. It is not a philosophical fortification to be supported by another's similar misconcep-

tion or device of folly; we would be no more intelligent if the whole world corroborated our errors and unwisdom, for the fault would simply be emphasized, not refined into the value of anything meritorious.

II. The Critical Function of Philosophy.

In his very clear critique of pragmatism Prof. B. H. Bode suggests that causality is sterile and not even potential if divorced from effectual realization. There can be no preexistent future so long as we have an alterable present and a variously efficient past; things in series cannot take up arbitrary positions without the dissolution of the old and the creation of a new series. "No intelligence, however great, could so comprehend a cross-section of cosmic history as to read in it all the details of the future. A given cause is not a cause until its effect has appeared. To call it a potential cause is merely to give it a name. In order to know the nature of anything it must be construed with reference to the result in which it terminates. It is in the result that the character of the cause finds its fruition or fulfilment. The result, moreover, does not simply endow its antecedent with the *name* of cause, but it brings to full reality the cause itself. There is thus a real identity between cause and effect. The character of transition, of coming to be, is precisely what we lose when cause and effect are arbitrarily kept asunder. The cause is only a condition of the effect."

With this proposition of cause and effect as existent only in transitional identity we find that we have to be more careful of our epistemology, our methods of inquiry and validation. It arouses us to treat our knowledge of the Universe as philosophically meagre but not negligible, as hardly consisting of more than a few paltry principles of law and unity, purpose and efficacy of relational influence. Our experience of things, even when taken as immediate and discreet in point of time and exclusive contact, is peculiarly replical of the actual nature and constitution of those things; the function of empirical knowledge being merely a direct and intentional transformation of the relation already existing between the subject and the object of the experience. The actual character of experience then is reflective rather than refractive of the light which illumines the casual function and ecbatic relation of mind and thing. The philosopher's experience may be more accurate and dignified but no more immediate and particular than that of the practical-minded common man; the latter often being more direct in the protean functions of the knowing process.

Expanding this principle of empirical causality to the critical function of Philosophy as it attempts to understand or interpret the Universe, we find that the constituency of every situation may be plural and temporal without adversely affecting the efficiency of our faculties to follow the normal procedure of inquiry and understanding. Physical and mental (or even the socalled spiritual) responses to the stimuli of passive experience are not appreciably different, except in point of some purposive interest or discipline perhaps, from the responses to actively pursued research and *aperçus intimés*. Things exist both before and after the experiencer has had his contact and his response, so why should we grow devout over idealistic claims that they exist knowably only while the thinker is having his fling at giving them a title of intellectual content. The knowing process is assuredly temporal and eventual but not necessarily titular and ephemerally intellectual.

A conscious continuum and some sort of a selective power over one's behavior are presupposed in the critical standpoint, it being customary to have coherence of knowledge and discrimination of judgment before adequate scope and capacity are possible, and quite necessary to have ephectic skill and logical analysis in advance of any openminded or inclusive world-conception. It is not so much a question of the degree of sentiency to which our experiencing process may be raised, but a question of how accurate and efficient is the critical relation between the human organism (subjective knower) and the Universe (objective knowable). Here then is a nice balance of interest and inquiry: to know whether there is any incompatibility really existent between two such elements of reality, even tho they do appear so divergent in the functions and vicissitudes of their daily relation. Seneca says that Nature continually provides for the exigencies of everything, so why should there be any fatal maladjustment or failure of faculty in our natural predisposition to intelligently understand the Cosmos, in the everlasting conflict between inner patterns of order and the order whose reality is apparently only external, mechanical and ready-made?

Bare objects are not philosophable because such a barrenness smacks of the absolute and the genuine absolute precludes any empirical or noetic relation. Empirical preclusion means that we are not conscious of an object's existence, but in a situation where a series lacks one or two determinable terms the possibility and approximate nature of their existence may be assumed on analogy

of serial ratios and relationships. A reality does not always have to lie *beyond* our power when we do not experience it; it may escape us merely because the *direction* of our functions is erratic or prejudiced. This is why we require methods of validation and verification, for the truth-relation has no meaning apart from the reality-relation existing between knower and known. Delusions may have certain elements of moral truth giving them power over us without having the least foundation in factual reality. Methectic proofs of what is true for one more or less emotional individual are for another not adequate proofs of the reality of what excites his hysteria. This is why dream-analysts are often such inaccurate psychologists.

Intellectualism cuts its own throat when it repudiates the immediacy of true experience. The conceptual apparatus is unnecessarily clumsy and cannot pretend agility only on the quondam claim that (for us) reality has no actually experiencable flux, that the external world exists only spasmodically in an indirect relation to human thoughts, activities and purposes. We are not philosophers when we cut out clever sections from a block universe as if every one of our functions were tools of rigid application instead of infra-casual activities, but rather when we take an unstudied part in all the life and meliorism that our total experience of the Universe affords. Reality is intimate and effective, not academic and aloof; it is durable and romantic, not decadent and effete. And if it has any sanction for our methods of approach it is certainly revealed in the fruits of a valid epistemology.

Philosophy, as a purely aspirational function of discretion and constructive insight, never hazards its goods on a pragmatic utility; it is too genuinely disinterested for that. It will not accumulate unnecessary formulae or apparatus, for these but further encumber an already difficult situation. It takes the Universe directly as it finds it, and by replical functions of type-grouping, phrase-integrating, and sublimation of principle it brings rational and tangible content into what is otherwise an empirical flow of durational existence and eventual activity. The adept in Philosophy is always looking for heurisms of objectivity, for guiding significances which will give connected meaning to his experiences, no matter whether they concern his private purse or passion so long as there is sense and uniformity in what they indicate.

Because a purposeful synthesis pervades the Universe development and evolution are considered intelligent and melioristic.

There is no absolute stagnation, no stoppage of the vast alembic processes of transmutation and aspirational effort. Philosophy, in the subtle function of dealing with whatever is possible, knowable and heuristic of valid symbols, must always go beyond the phenomenal, behind the apparent, under the superficial, and higher than the merely utile or empirical values of what is largely a specious physical sentiency. It is in constant caution of being too narrow, too ineffable, and is forever conscious that there are certain elements of otherness just ready to break into the arena of intellectual combat and sensory deliverance.

A great change has been made in the philosophical attitude recently. It results from one of the most valuable contributions of that branch of mathematical inquiry known as logistics, and whose popular application seeks into the nature and implications of Non-Euclidean Geometry, the fourth dimension, hyper-space, etc. The mathematics of the pseudo-sphere has disproven the universality of Euclidean Geometry and the principle of relativity, whether Einsteinean or mechanistic, has driven the old rationalisms from the field. We are coming into a romanticism of certitude in place of the oldtime obscurantism of platitude. In fact the ready-made "gentile traditions" of our predecessors are now being put to such rigid tests that it is becoming more and more seldom that anything survives as an applicative generality of the absolute. The spirit or manner of serious modern inquiry has a social way about it that makes possible its acceptance by many minds at once. Nothing is too sacred or too recondite for its investigation and analysis; it recognizes no sacrilege or profanity in the methods of its search, for the fact of its inquisitive aspiration is contradictory and prohibitory of any degrading indulgence. Yet there is the constant probability (nay, certainty) that all our knowledge and the means of its acquisition are too meagre, incomplete, and hence thus far unreliable as a ground for claiming finality of synthetic viewpoint.

Any fool can see that we are forever convicting ourselves of our own ignorance and bigotry. We arise by generous inquiry and fall by dogmatic assertion. The compulsion to a confession of this fatal law of mind was the secret power of the Socratic philosophy; the struggle to recognize that part of us which does the confessing, and by so doing must be of a superior and more permanent intelligence, was the primary aim of Platonism; but the Aristotelian research into all the *relations* of mind and thing was the direct ancestor of the modern attitude of openminded inquiry and verification.

Yet the revolutionary contribution of modern thought is, not to entertain the mere recognition of relationship between inner mind and external objects, but to classify, study, aid, and make efficient all the activities and exertions by which this relationship is maintained. Thus is there a greater and more durable significance added to the popular meaning of such modern phrases as "creative imagination," "constructive intuition," "powers of genius," "scientific research," et al.

Philosophy has ceased to be the sit-down-and-group-things-together sort of conciliatory synthesis; this has become our common-sense, our everyday wisdom. The old ambition to put a friendly lid on the controversy between religion and science has passed into the hope of someday knowing just how significant is the progressive variation of function running thru that intellectual series of Hegelian mental states called ignorance, common-sense, and Philosophy. For the honest sage these three are mutually hostile or at least opposed in aim and function, and in certain strenuous moments the first two will make common cause against the third. It is however a vain antagonism, for in its choicest sense, meaning truly the unselfish *love of wisdom*, Philosophy is the life of inclusiveness and intelligence, not that of mere pride and base utility. So who will ever dare to hope that some larger discernment of human nature will show that a philosopher and a fool are interchangeable, or that either of them would make a successful business-man or banker? Such a combination is far more difficult than any so far attempted; and yet, let us not disappoint the courage of our relativity with too great an attachment to any one qualitative absolute. The chromatic circle of Sir Isaac Newton was meant to symbolize a far greater truth than the simple principle of complimentary colors. Spinning this circle around, the resulting effect on the eye is the same as that which is caused by white light. Likewise, perhaps if we should spin our trisected circle of mental qualities (or attitudes) there would be no appreciable difference of effect on an honest sage between that of folly and that of philosophy. Without consideration of the utile and moral values what is the difference to the Universe whether one is an ignoramus or a devout philosopher? On what defensible metaphysical grounds can we even say that the insane are ruled out from communion with reality any more than the agnoiant are from truth?

When I speak of "our" universe I mean the mind's grasp and

demonstration to itself of all experienceable existences,—a situation where the extent of mental perception and the imminence of reality are considered coequal. It is highly permissible and human enough to find occasion for thinking this way, is it not? If so, then on a psychological consideration of the means we adopt whereby to discern and know the secrets of Nature we may recognize that the purpose of Philosophy is to show that there is a possible and even very divergent difference between "our" universe and that wide and inexhaustible series of metaphysical phases of order and extra-cosmic law called *the* Universe. Even today, all the few facts and "explanations" of the phenomena of the celestial vault come from that not-always-mathematical science, astronomy. Heretofore, cosmology has been but a mere cataloguing of celestial miracles and matter with an interspersed description of a few of its appurtenances such as ether-tests, space-variation and nebular reflection; even the admirable adjunct spectroscopy is serviceable only as a more or less accurate analysis of the photometric relations of celestial matter.

To evade the inevitable prolapsis of a too partial physical research Prof. Osborn Reynolds has initiated the "cosmic grain" as an immaterial unit of energetic potential which, in an unaccountable and asymmetrical relation to its fellow grains, causes a convenient dilatancy of space and we call the visual effect matter. Astronomic traditions have given us standard measurements of Time and Space, reducing them to units expressed in phrases such as the light-year, angular microns, and parsecs of variation in periodical changes of parallax. Even these slight tokens of obese measurement seem insignificant when prefixed by numbers running up to several integral and decimal places. A universe of a radius expressed as a billion light-years may well be considered a mere Nordmannesque bubble in some vaster heterogeneous Universe where the whole Milky Way registered only .000001 parsec at the assumed central point of paralactic reference. It is the outstanding fact of all accurate and fruitful research that mathematical possibility is the philosophical door thru which we needs must pass in order to see the future hypothetical recognition that the Universe is of vaster proportions and functions than astronomy, scholasticism, humanistic refinement or any materialistic science will ever disclose.

The analogies of biological evolution would have us believe that brute perfected becomes man, man perfected becomes God,

God perfected (above mere life-binding sufficiency) becomes a Super-Divinity of Nature-binding and cosmic-conscious intelligence. So why should we not likewise consider that the cosmos, "our" universe, shall gradually expand and, subjectively rather than objectively, evolve into an ultra-universe or at least an infra-Universe just as surely as the protoplasmic cell becomes a man instead of a stone or piece of metal ore. We have outgrown that era of material interpretations of the cosmos which so loudly proclaimed the conservation of energy and the stability of *coelus et mundo*. No more do we look on that vast expanse of wide-spaced matter and think that we so easily behold the Divine Handiwork. We have even doubted that the starry vault of heaven could be a fit and worthy scene of our immortality, since science must now reject as untenable much of what was once held true and certain. It is questionable how and where we can expect our affective and memory nature to survive, seeing that structures decay and functions cease at death.

What if we could conceive of mind-dust, the degree of its attenuation, or whether its individual spheres were intermingled at their peripheries? It would not be the fact or measurement of it that gave value to that conception, but rather the mysterious ability of others to reconceive which seems to be casually inherent in the first grasp of any new discovery. This reconceiving power is what the world needs when any great seer, sage or prophet comes announcing his message and his mission. And we are not only in need of the power to reconceive the good, but also sadly deficient in the power of honest thought. The only truly spiritual sublimation of physical development is a result of exercising those talents and powers we already have, in view of adding new genius and grace to bear the responsibilities of life. Seeking the sublime with a docile mind is the beginning of all intelligent soul-development. Old Doc Eliphalet Nott, in his early school-days, made for himself the memorable discovery that "the acquisition of power is of more value than the acquisition of knowledge," and the efficient application of this discovery thruout the later years of his life was the secret of his worthy influence as president over Union College. But the main point of bearing in these observations is that the fact, or even the strangeness of the possibility of intelligent evolution, must derive its propriety and efficacy of application from a grander scheme of things, a parent evolution which bears forth the lesser offspring. This relative condition has previously been

set down as that existing between "our" universe and *the* Universe, but even this last is not an irreducible absolute.

Therefore, while our reason's chief weapon, analogy, is the one we needs must use in all extra-physical research and ultra-Natural speculation, we must practice, not only logical thinking, but also analogic and paradialectic thinking. Even the Aristotelian logic, we remember, required a closer Stoic dialectic to justify its nominalism and validate its realistic application. If there is no similarity in the working out of governments and civilizations, solar systems and evolutions; if there is no basic analogy between psychic aspirations and physical desires, between spiritual awakenings and the budding out of verdant Nature, then reason is useless, thought is futile, we are finite triflers, and the Universe as a multi-phased cycle of numerous Realities is non-existent, a mere illusion of the human imagination. Such an alternative absolutely goes against the grain of our being; the soul's aspirations refute such a condition, and even the mind's perennial speculations presuppose the unreality of such a negation as this would imply. We simply cannot see lack of existence where everything *is* existence and stay in that mental condition which we call rational. And yet the superposition (superstition) of one upon the other has been the dream of the ages, of priests, fakirs, alchemists, abiogenesists, et al. The persuasion and the difficulty come rather from the premise of infinity, and when a finite power like human logic plays on an infinite mass like *the* Universe very little motional effect can be observed, if any. Reason alone then may be inexhaustible but not infinite, and hence cannot be our only adequate plumb-line in ascertaining the rectitude of reality.

Truth for us is more of an endogenic calculus of inward contingency than it is the recording of an inceptive external absolute. But *a* truth or *any* truth, as the immediate entitial fact delivered to a conscious intelligence and also, as we might abstractly see it, conceived realistically to be a replica of its external object, rule or relation, should be self-evident as soon as it is perceived. There should be no problem of truth, altho there are many reasons for having problems of knowledge and reality. But on introduction of the human element into our judgments no wonder our conduct entails problems galore of true and false, good and evil, holy and profane, real and illusory, progressive and decadent, artistic and utilitarian. Hence is our alethiology too empirical and humanistic to partake freely of a more significant cosmic relativity. It is

enough that our epistemology has had such a struggle against intellectualism and rational dogmatics without also ravaging it with our automorphic lust for utility and pragmatic sanction.

Immediate experience and its somewhat forced pragmatic sanctions for catching truth on the wing may serve well as accessories to the utility values of our all-too-humanistic life, but should not be regarded as the only heurisms, and not even as valid postulates, of the philosophically real. Pragmatism, humanism, rationalism and mechanisticism all share alike the fallacy of empirical efficiency which presupposes that all the functional relations of time and space are homogeneous. The continuous duration and possibility of motion which characterizes all free agencies and things gives them homogeneous *structural* relations, but there is no implied or ultimate guarantee that this given character shall be carried over to their functions in a knowable cosmic series. Such a series is knowable only on condition that its time and space areas have homogeneous structural relations and are therefore subject to the mathematical equations applicable thereto.

Is a formulation of relativity possible, or is that formulation merely a series of intellectual contents set forth in superior relation to some less coherent system of concepts? Is the incongruity of surd equations irreducible for any other reason than because we have no adequate philosophy of the variable and irrational aspects of reality? Perhaps there is no such thing as absolute relativity, because that is a contradiction of terms, and further, because a universal principle is a causal principle only when there is an effect produced by its active presence. The universally active is causal in nature and function while the universally objective is effectual or responsive only because its functions are relative and dependent upon stimulation by the causal. Many of our speculative measures fail of meeting the requirements of a stern but not necessarily rigid philosophical viewpoint because we are so incorrigibly set in the fallacy of hypostatizing our instruments of thought and conduct (Prof. Kallen) into indices of the real and true. This fallacy is the perennial flower of our pseudo-subjectivism and, no matter how romantic and full of specious relish, ultimately encumbers and confounds whatever skill and insight our speculations may boast.

No wonder then that the socalled realism of practically every schematism in philosophy and religion is just such a hypostasis and predication of our subjective moods. We metonymize our own

ideas and force (or weakness) of character into what is afterward projected as an anagoge or proudly even a *type* of the plan and process, the destined functions of events in the external world. It may be useful in this world to be pragmatic in everything we think and do, but it is certainly treacherous ground on which to erect a philosophy and try to reify our criterion above the natural and specific situation which demands such dignity and decision.

III. The Creative or Genetic Function of Philosophy

Fichte's philosophy of identity where objective form and subjective idea coincide is the ideal if not the most practical ground for epistemology, and his view of human nature as something always *striving for better conditions of life* was and is the naturalistic if not the romantic ground for the interpretation of all our religious data. Very few of the functions of our conscious moments but have major elements of this or that desire, purpose, hope or aspiration—some aim thru which to realize an ideal and melioristic situation. The ultimate object of our efforts being the fundamental ideal of unity, the identity or reification of idea into external form. This is the normal mature complementary function which follows the adolescent function of idealizing the external forms of reality so as to know and adapt them to our uses.

According to this viewpoint there would seem to be real external existents for counterparts to every idea or conception we have. It is the conceptual argument in the old Cartesian and Scottish realism. Kant was the first to call a halt on the many far-fetched assumptions and specious parallogisms of this romantic dualism. The tender minds who have followed him, from Hegel and Schelling, Cousin and Mamiani down to Fischer and Caird, Boutroux and Croce, have been constantly under that influence of rational content which makes problems of everything within reach of human interest and analysis. It served as common ground on which Huxley proclaimed the moral indifference of Nature, Martineau her omnipresent concern to help us learn and grow, Renouvier to hold that all the cosmic relations are equations of experienceable function, and James to show his preference for the radical utility of truth. But some one or another of the philosophical disciplines seem always to be lacking. The several readers do not emphasize the same parts of the cosmic context, altho each of them rationalizes his interpretation as if his particular choice of aspect was typical and exclusive. It is significant as well as a strange turn of Nature's irony that we must go back to Fichte to find a self-

conscious metaphysic which does not resourcefully keep a secret exit ready for any controversial emergency.

Philosophy is not an ivory tower from which to observe reality and truth caught struggling against the elements of a more or less tragic human experience. It affords no honest ground from which to violently seize its speculative prey from the thicket of empirical deliverance. Rather does it discount and repudiate the invalid humanism of our automorphic judgments, the rancorous rhyomism of our mercenary satisfactions, and the indefensible symbolism of our commercial arts and mischiefs. It is indeed a narrow and feeble viewpoint which cannot include the scope of its own slight significance. If there were not now and then some larger field of inquiry and philosophical embrace we would surely be in sorry plight, for we would soon be swamped in the bog of sophistry and speculative mediocrity. Educational progress demands nobility and insight above the merely practical, the bare mechanical functions of life.

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(TO BE CONTINUED.)

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